

FISHES FROM THE RUPUNUNI RIVER, BRITISH GUIANA.

BY HENRY W. FOWLER.

In the fall of 1912 the Academy received a collection of fresh-water fishes from the Rupununi River, in the highlands of British Guiana. The specimens were purchased from Mr. J. Ogilvie, who collected them during the same year and in 1911. Mr. Ogilvie informs me, in lieu of the name of any settlement or town, they were approximately secured in North Latitude 2° to 3° , and West Longitude $50^{\circ} 20'$. A number are apparently new or undescribed, while others are not only new records for the Rupununi, but also for Guiana as well. The figures are all drawn to scale, each number over the accompanying line signifying millimeters.

SELACHII.

DASYATIDÆ.

Potamotrygon hystrix (Müller and Troschel).

One young foetal example. Color pale uniform brown. Six papillæ on floor of mouth. Body mostly smooth, without prickles or warts. Length 145 mm., disk width 60 mm.

TELEOSTOMI.

OSTEOGLOSSIDÆ.

Osteoglossum bicirrhosum Agassiz. Fig. 1 (young).

One 273 mm. Also three young with yolk-sacs still adherent. According to Mr. Ogilvie, this fish carries its young in its mouth until they wholly absorb the yolk and they are able to fend for themselves.

CHARACIDÆ.

CURIMATINÆ.

Curimatus cyprinoides (Linnæus).

One example, which agrees with my Ambyiacu River examples in the absence of gill-rakers, and with my figure.¹

Dr. Eigenmann rightly corrects my use of *Curimata*² to the present

¹ *Proc. Acad. Nat. Sci. Phila.*, 1906, p. 301, fig. 6.

² *Amer. Nat.*, XLI, 1907, p. 768.

form, as I overlooked Oken, though he wrongly identifies³ the examples I recorded as *Psectrogaster ciliatus* within the genus *Curimatus*.

They are undoubtedly members of the genus *Psectrogaster*, as their spinescent scales show, and cannot be identified with the diagnosis he gives for the species *Curimatus ciliatus*, and this after he had examined the type of *Anodus ciliatus* Müller and Troschel in Berlin. If this species is found identical with *Curimatus cyprinoides* (Linnaeus), this latter name will, of course, supersede. Contrary to my arrangement in 1906, I now believe my Ambyiacu and Upper Amazon specimens to belong to *Psectrogaster amazonicus* Eigenmann and Eigenmann.

Subgenus CYPHOCHARAX Fowler.

Back not elevated, but upper profile nearly straight from above eye to near dorsal. Scales large, 36 or less in lateral line, and in nearly even longitudinal series.

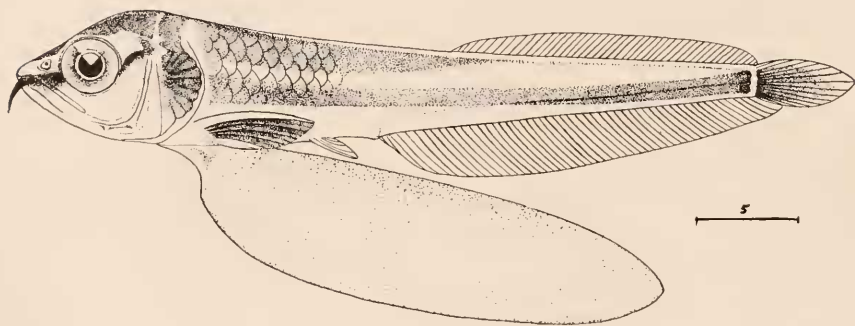


Fig. 1.—*Osteoglossum bicirrhosum* Agassiz. (Young.)

This diagnosis is recast, as the species I identified with the designated type is certainly different.

Curimatus spilurus Günther.

One example 93 mm.

CHILODINÆ.

Chilodus labyrinthicus rupununi subsp. nov. Fig. 2.

Head $3\frac{3}{5}$; depth $3\frac{1}{4}$; D. iv, 9, 1; A. iv, 7, 1; P, 1, 14; V, 1, 8; scales 27 in l. l. to caudal base, and 4 more on latter; 5 scales above l. l.; 4 scales below l. l. to ventral origin; 3 scales below l. l. to anal origin; about 8 predorsal scales; head width $1\frac{1}{2}$ its length; head depth at occiput $1\frac{1}{3}$; snout 3; eye $3\frac{1}{8}$; maxillary $3\frac{1}{4}$; interorbital $2\frac{1}{4}$; first

³ Mem. Carnegie Mus., V, 1912, p. 269.

branched dorsal ray trifle longer than head; first branched anal ray $1\frac{3}{4}$ in head; pectoral $1\frac{1}{2}$; ventral $1\frac{1}{5}$.

Body elongate, robust, moderately compressed, and deepest at dorsal origin. Predorsal with slight or obsolete keel just before dorsal origin, other edges of body all convex, and that of preventral broad and flattened, or only very obsolete keel or ridge along outer boundaries. Lower profile evenly convex. Caudal peduncle compressed, small, about long as deep.

Head robust, somewhat pyramidal, upper surface slightly depressed, and lower broadly convex, convex sides not especially converging below. Upper profile slightly convex, less inclined than

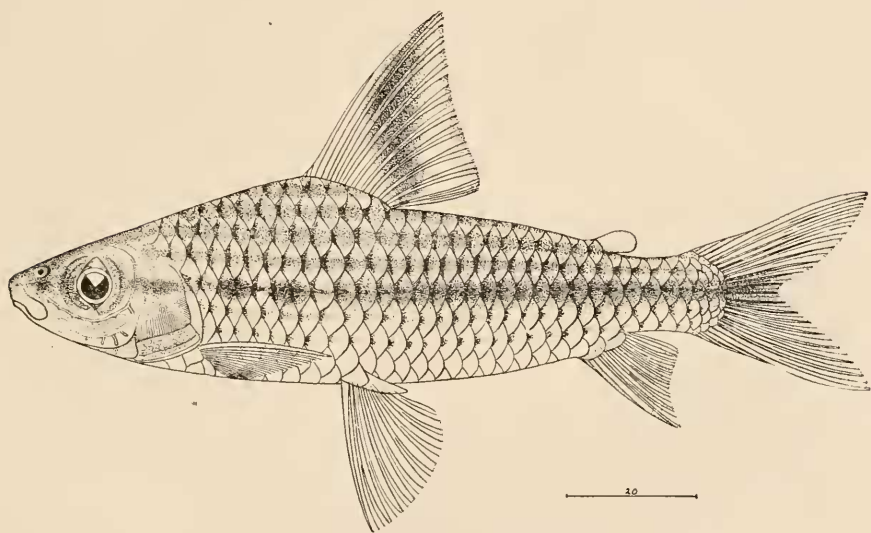


Fig. 2.—*Chilodus labyrinthicus rupununi* Fowler. (Type.)

lower. Snout broadly triangular as seen from above, surface convex, and length about half its width. Eye large, circular, high, and a little anterior in head. Adipose-eyelid broad, exposes most of very broad pupil. Mouth small, terminally inferior, and seen below transversely crescentic. Upper jaw with single series of small weak filament-like teeth, none in lower jaw. Maxillary small, upper edge slips below preorbital, and slightly expanded distal end reaches opposite posterior nostril. Mandible small, shallow, each ramus well elevated inside mouth. Tongue well back, large, depressed, free. Nostrils well developed, superiorly lateral, together, in last third of snout length, anterior with well-developed cutaneous rim

and posterior exposed as crescent. Interorbital broad, flattened. Infraorbital large, covers most of cheek, surface with radiating striæ. Opercle striate, and subopercle projects moderately posteriorly, both with striate surfaces. Occipital fontanel well developed, extends forward nearly to front of eyes.

Gill-opening extends forward for last third in head. Gill-rakers about $10 + 20$ weak flexible filaments, about $\frac{1}{3}$ length of gill-filaments, and outer series separated by high cutaneous or cartilaginous partition. Gill-filaments about 2 in eye. Isthmus broad. Branchiostegals with inner shortest and outer longest.

Scales large, firm, well exposed, in regular horizontal series, entire, and more or less uniform except smaller ones on caudal base. Surface of exposure of each scale pitted or with variously shaped shallow cavities, not interfering with general smoothness to touch. Long pointed free scaly flap in axil of ventral. Lateral line complete, midway along side, of simple tubes and each opening by pore at middle of scale exposure.

Dorsal origin midway between that of adipose fin and snout tip, first branched ray longest with fourth simple but slightly shorter, and fin depressed slightly more than half way to caudal base. Adipose fin inserted about midway between depressed dorsal tip and caudal base, fin small. Anal inserted slightly before adipose fin, first branched ray longest, lower edge of fin slightly emarginated, and when depressed reaches caudal base. Caudal well forked, lobes broad, apparently (damaged) equal. Pectoral low, pointed, reaches about $\frac{9}{16}$ to ventral, and latter inserted behind second branched dorsal ray base, reaches $\frac{2}{3}$ to anal. Vent close before anal.

Color in alcohol largely pale brownish, ground color mostly uniform. Above lateral line four lengthwise deeper brownish bands, upper three, together with additional median dorsal band, much broader than lower ones, and each extending over median portions of scales. L. l. in a broad underlaid pale slaty to dusky band, not quite equal to pupil diameter in width, and extending posteriorly out on median rays of caudal to their tips. Each scale in dark longitudinal bands, besides those in l. l. and for most of extent of two lengthwise series of scales below l. l., with deep dusky-brown spot formed at its base. Dark median lateral band of trunk continued on head across opercle and in front to snout tip. Head brown above, pale like belly below. Eye slaty. Above pectoral in course of dark lateral band two ill-defined dusky spots, subequal, and each about long as pupil. Fins all pale or whitish in general tint, though dorsal

with broad vertical dusky band, slightly narrowing below, and upper posterior edge of fin slightly dusky. Caudal, except as stated above, pale and uniform. Adipose fin pale brownish. Lower fins all pale or whitish.

Length 136 mm. (caudal tips damaged).

Type, No. 39,306, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Only the type known. This differs from *Chilodus labyrinthicus* (Kner)⁴ in coloration, that species having but one blackish spot above the depressed pectoral fin.

(Named for the Rupununi River.)

HEMIODONTINÆ.

Hemiodus semitæniatus Kner.

One example 83 mm. long (caudal tips damaged), agrees with Kner's account. The depth ($4\frac{1}{2}$) is probably due to age, as all the other characters are in accord. The scales (according to the pockets) are 55 in l. l. to caudal base and 3 more on latter, besides 9 above l. l. Eigenmann identifies examples from Konawaruk and Gluck Island with this species,⁵ though they are likely wrongly so called, as they show the depth 4 to $4\frac{1}{2}$ and the scales 44 or 45 in l. l., with only 7 above.

Hemiodus quadrimaculatus Pellegrin.

Two examples, one 115 mm. and the other 32 mm.

Anisitsia notata (Schomburgk).

One 147 mm. long and another 157 mm.

PYRRHULININÆ.

Pyrrhulina filamentosa Valenciennes.

One 70 mm. Eigenmann mentions "adipose brick-red," certainly an error if referring to an adipose fin.⁶

NANNOSTOMINÆ.

Characidium blennioides Eigenmann.

One example 47 mm. (caudal damaged).

Characidium fasciadorsale sp. nov. Fig. 3.

Head $3\frac{4}{5}$; depth $5\frac{1}{4}$; D. III, 8; A. III, 7; P. II, 8; V. I, 8; scales 34 in lateral line to caudal base and 2 more on latter; 5 scales above

⁴ *Microodus labyrinthicus* Kner, *Denk. Ak. Wiss. Wien*, XVII, 1859, p. 149, Pl. 3, fig. 5. Rio Branco and Barra do Rio Negro.

⁵ *Mem. Carnegie Mus.*, V, 1912, p. 276, Pl. 36, fig. 3.

⁶ *L.c.*, p. 279.

l. l.; 3 scales below l. l. to ventral origin; 3 scales below l. l. to anal origin; 9 scales before dorsal; head width $2\frac{1}{8}$ in its length; head depth at occiput $1\frac{1}{2}$; snout 4; eye $3\frac{2}{5}$; maxillary $4\frac{2}{5}$; interorbital $4\frac{1}{4}$; length of dorsal 1; least depth of caudal peduncle $2\frac{1}{2}$; upper caudal lobe $1\frac{1}{10}$; pectoral 1; ventral $1\frac{1}{5}$.

Body elongate, slender, moderately compressed, greatest depth at dorsal origin, profiles similar and edges rounded. Caudal peduncle well compressed, least depth about $1\frac{3}{4}$ its length.

Head attenuated, compressed, flattened sides but scarcely converging below, upper profile convex and lower concave. Snout conic, protruding slightly, compressed, long as broad. Eye rounded, little longer than deep, high and slightly anterior. Mouth small, transverse. Teeth small, invested with membrane, conic, simple, pointed. Maxillary small, free, well inclined, reaches midway in

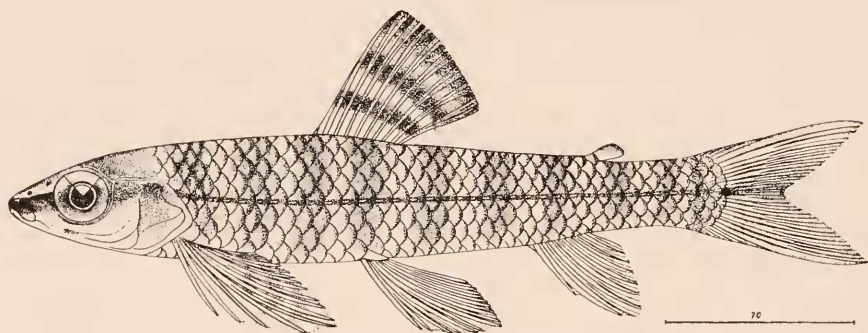


Fig. 3.—*Characidium fasciadorsale* Fowler. (Type.)

space between front and hind nostrils. Tongue depressed, free in front. Mandible shallow in front, and rami well elevated inside mouth. Nostrils well separated, anterior about midway in snout length, and posterior close before front eye edge, both simple pores. Preorbital triangular, length about $\frac{3}{5}$ of eye. Interorbital broadly convex. Infraorbitals narrow. Opercle moderate, surface smooth. Subopercle extended posteriorly and with broad cutaneous flap.

Gill-opening extends forward about opposite hind edge of pupil. Gill-rakers about $4 + 10$? short weak points, about $\frac{1}{3}$ length of filaments and latter about $2\frac{1}{2}$ in eye. Isthmus moderately broad. Branchiostegals moderate.

Scales mostly uniform in size, in even longitudinal series parallel with l. l., well exposed, and each showing about six horizontal striae on exposures. Ventral axilla with rather short pointed free scaly

flap. L. l. complete, midway along side, and of simple tubes which at first extend half way over exposure of scale and posteriorly about three-quarters.

Dorsal origin about midway between snout tip and end of adipose fin, first branched ray highest, extends almost as far posteriorly as tip of last, and depressed fin reaches but slightly less than half way to caudal base. Adipose fin small, inserted about midway between end of depressed dorsal and caudal base. Anal inserted close behind depressed dorsal tip, and fin extends about two-thirds to caudal base. Caudal well forked, sharply pointed lobes about equal. Pectoral pointed, with median rays longest, and fin reaches almost to ventral origin. Ventral inserted about opposite middle of dorsal base, fin reaches four-fifths to anal. Vent close before anal.

Color in alcohol with very pale brown ground color, scarcely paler below. A narrow brownish lateral band, about equal to diameter of pupil in width on head, though on trunk reduced to narrow line, extends from snout tip to caudal base where it ends in small detached dusky spot. Head pale brownish above, whitish or paler beneath. Lips and front half of maxillary dusky, though posterior half of maxillary contrasted pale or whitish like lower surface of head. Eye slaty. Trunk with ten transverse deep brownish bands, a little broader than interspaces, and within area of each edge of each scale deeper brown. Dorsal and caudal dull grayish, with at least three transverse or horizontal dusky streaks across former. Pectoral, ventral and anal pale and uniform. No dark median dorsal streak.

Length 47 mm.

Type, No. 39,307, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Also Nos. 39,308 and 39,309, same data, paratypes. These show: Head $3\frac{2}{5}$ and $3\frac{4}{5}$; depth 5 and $5\frac{1}{2}$; D. III, 9 and III, 7; scales 32 ? (injured) in l. l. to caudal base and about 3 more on latter; 5 scales above l. l.; 3 scales below l. l. to anal origin; 9 predorsal scales; snout $4\frac{2}{5}$ and 4; eye $3\frac{1}{4}$ and $3\frac{1}{2}$; maxillary 4 and $4\frac{1}{5}$; interorbital $4\frac{1}{4}$ and 4; length 35 and 42 mm., respectively. The smaller example differs from the others in having the pectoral extending slightly beyond the ventral origin and the latter fin reaching the anal origin.

This species is related to *Characidium etheostoma* Cope⁷ in coloration, but is much more slender, thus approaching *Characidium*

⁷ *Proc. Acad. Nat. Sci. Phila.*, 1906, p. 323, fig. 17. Type.

catenatum Eigenmann.⁸ From the latter it differs chiefly in the dark horizontal cross-bands on the dorsal fin, that species being figured and described as having a uniform dorsal.

(*Fascia*, streak; *dorsalis*, of the back; with reference to the streaked dorsal fin.)

ANOSTOMINÆ.

Leporellus vittatus (Valenciennes).

Two examples, one 195 mm. and the other 126 mm. Compared with the example from the Peruvian Amazon,⁹ I find they differ only according to age. I cannot find that the species has been recorded from Guiana previously. The following notes may be of value: Head $3\frac{3}{7}$; depth $4\frac{1}{2}$; D. III, 9, 1 or III, 10, 1; A. III, 8, 1; scales 37 to 39 in l. l. to caudal base and 4 or 5 more on latter; 6 scales above l. l.; 5 scales below l. l. to anal origin; 11 predorsal scales; snout $2\frac{1}{3}$ in head; eye 5 to 6; maxillary 3 to $3\frac{1}{2}$. In color these examples show a dark or dusky spot on each scale of sides and back. Dark spots on head large and irregular on front and snout, small and less numerous on cheek and opercle. Dorsal with large broad distal blackish blotch, and another blackish streak transversely subbasally. Broad dark lateral band includes l. l. and extends out on median caudal rays to their tips. Each caudal lobe with two blackish transverse horizontal bars. Adipose fin pale, lower edge blackish. Other fins pale, ventrals and anal with median dusky shade.

Anostomus anostomus (Linneus).

Three examples, 81 to 85 mm. (caudals damaged).

Leporinus nigrotæniatus (Schomburgk).

Five examples, 142 to 190 mm.

Leporinus friderici (Bloch).

One example 210 mm. in length, and a smaller one 120 mm. long.¹⁰

Leporinus alternus Eigenmann.

Two examples, 70 to 73 mm. in length. The only point at variance in the original account is the statement "four graduated, obliquely-pointed teeth in each jaw," my examples, however, showing eight teeth in each jaw.

⁸ *Mem. Carnegie Mus.*, V, 1912, p. 293, Pls. 38, figs. 5-6. Warraputa, Rockstone and Crab Falls.

⁹ *Proc. Acad. Nat. Sci. Phila.*, 1906, p. 327.

¹⁰ The Parahyba example which I identified with *Salmo fasciatus* Bloch, in *Proc. Acad. Nat. Sci. Phila.*, 1906, p. 328, I feel certain is identical with *Leporinus conirostris* Steindachner, *Sitz. Ak. Wiss. Wien*, LXXI, I, 1875, p. 233, Pl. 4.

Leporinus paralternus sp. nov. Fig. 4.

Head $3\frac{7}{8}$; depth $4\frac{1}{8}$; D. III, 10, 1; A. III, 8; P. I, 16; V. I, 8; scales 36 in lateral line to caudal base, and 3 more on latter; 6 scales above l. l.; 5 scales below l. l. to ventral origin; 5 scales below l. l. to anal origin; 13 predorsal scales; head width 2 in its length; head depth at occiput $1\frac{2}{3}$; snout $2\frac{1}{4}$; eye $4\frac{1}{2}$; maxillary 4; interorbital 3; first branched dorsal ray $1\frac{1}{5}$; first branched anal ray $1\frac{3}{5}$; upper caudal lobe 1; least depth of caudal peduncle $2\frac{1}{2}$; pectoral $1\frac{1}{2}$; ventral $1\frac{1}{2}$.

Body moderately long and slender, compressed, deepest at dorsal origin, and edges all convexly rounded. Caudal peduncle well compressed, about long as deep.

Head rather conic, compressed, sides flattened slightly though about evenly curving over above and below. Snout elongate, conic,

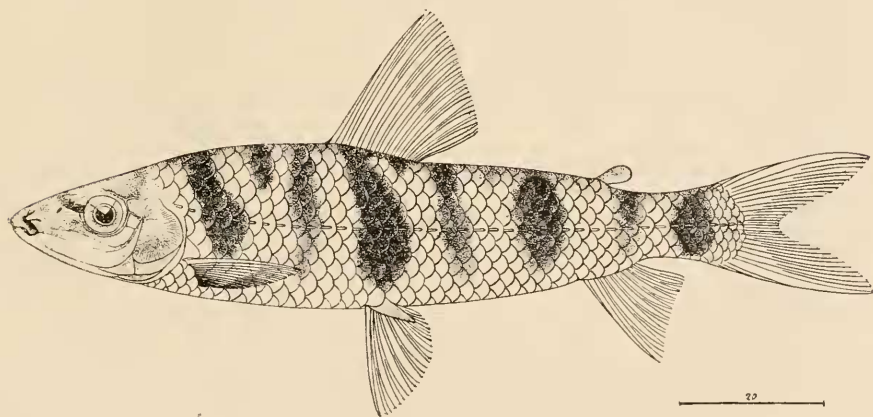


Fig. 4.—*Leporinus paralternus* Fowler. (Type.)

long as broad. Eye rounded, a little high, centre about midway in head. Adipose-eyelid very slight. Mouth small, nearly terminal, or but slightly inferior, so that upper jaw only protrudes very little. Maxillary moderately inclined, small, extends a little beyond anterior nostril, though not to posterior. Lips thick, fleshy, entire. Eight teeth in each jaw, graduated forward to median which are longest, and all ending in a point on cutting-edge. Inner buccal membrane above quite broad. Tongue little distinct. Mandible shallow in front, short rami well elevated in mouth. Anterior nostril lateral, in small cutaneous tube reaching back nearly to posterior, which latter simple and about last $\frac{2}{5}$ in snout length, also lateral. Interorbital evenly convex. Suborbitals of moderate width. Preopercle

edge inclined forward. Opercle moderately large, with a few radiating striae on its lower edge.

Gill-openings lateral, extend forward about opposite hind preopercle edge. Gill-rakers about $11 + 9$ points, about 3 in gill-filaments, and latter $1\frac{1}{3}$ in eye. Isthmus broad. Branchiostegals large, subequal.

Scales large, well exposed in longitudinal series parallel with l. l., more or less uniform in size, though a little smaller on breast and caudal base. Scales ensheath bases of dorsal and anal, though not extending on the fins. Ventral with free pointed axillary scale trifle less than half length of fin. Lateral line complete, midway along side, extends on caudal base, and formed of simple tubes extending well over scales.

Dorsal origin a little nearer hind edge of adipose fin than snout tip, first branched ray longest, and depressed fin extends $\frac{3}{7}$ to caudal base. Anal inserted well behind depressed dorsal, first branched ray longest and reaches caudal base. Caudal well forked, pointed lobes equal. Adipose fin about $\frac{4}{5}$ of eye, inserted about midway between caudal base and hind edge of depressed dorsal fin. Pectoral small, low, extends $\frac{1}{7}$ to ventral origin. Ventral inserted behind second branched dorsal ray base, fin extending trifle more than half way to anal origin. Vent at last third in space between depressed ventral tips and anal origin.

Color in alcohol largely pale uniform brownish above, below, or on belly and abdomen, paler and whitish. Head brownish above, sides and below paler. Lips pale. Iris slaty. Trunk with nine dusky to blackish transverse cross bands, of which first or that just after occiput, fourth or that below dorsal, seventh or that just before adipose fin, and last at caudal base, broader or much more expanded than others. Second intermediate, also fifth intermediate transverse streaks entirely dorsal and only extend down each side half way to lateral line. Fins all pale or uniform, dorsal and caudal slightly darker, and adipose fin with a little grayish.

Length 120 mm.

Type, No. 39,320, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Nos. 39,321 to 39,323, paratypes, same data. Head $3\frac{1}{2}$ to $3\frac{2}{3}$; depth 4 to $4\frac{1}{4}$; D. III, 10, 1; A. III, 8, 1; scales 36 or 37 in l. l. to caudal base and 3 or 4 more on latter; 6 scales above l. l.; 5 scales below l. l.; 13 predorsal scales; snout $2\frac{2}{3}$ to $2\frac{1}{2}$ in head; eye 4 to $4\frac{1}{8}$; maxillary $4\frac{1}{4}$ to $4\frac{2}{3}$; interorbital 3; length 75 to 82 mm. These

examples all agree with the type in the constancy of their color patterns.

The present species is distinguished from its ally, the preceding, by the presence of an extra black streak before the dorsal.

(*Para*, near; *alternus*, alternate, the related species.)

MYOCHARAX subgen. nov.

Type *Leporinus desmotes* sp. nov.

Differs from the subgenus *Anostomus* in the dentition, that of the mandible being composed of two long slender curved rodent-like incisors, and also two somewhat similar though much shorter ones externally and well back. Upper jaw with six tricuspid incisor-like teeth. Anterior nostrils in rather long cutaneous tubes.

One species, described below.

(*Mvs*, mouse; *χαράζ*, Charax; with reference to the rodent-like teeth.)

Leporinus desmotes sp. nov. Fig. 5.

Head 4; depth $4\frac{2}{3}$; D. III, 10, 1; A. III, 8, 1; P. I, 16; V. I, 9; scales 35 in lateral line to caudal base and 6 more on latter; 6 scales above l. l.; 5 scales below l. l. to ventral origin; 5 scales below l. l. to anal origin; 13 predorsal scales; head width 2 in its length; head depth at occiput $1\frac{1}{2}$; snout $2\frac{1}{3}$; eye 4; maxillary 4; inter-orbital $2\frac{1}{3}$; first branched dorsal ray 1; first branched anal ray $1\frac{2}{7}$; least depth of caudal peduncle $2\frac{3}{4}$; upper caudal lobe $1\frac{1}{8}$?; pectoral $1\frac{2}{5}$; ventral $1\frac{1}{4}$.

Body elongate, compressed, tapers somewhat posteriorly, deepest at dorsal origin, anterior upper profile rather evenly convex, and edges all convexly rounded. Caudal peduncle compressed, about long as deep.

Head rather small, compressed, somewhat conic, surfaces rather conic, and profiles similarly straight and inclined. Snout conic, broad, length $\frac{4}{5}$ its width, and as seen from above rather acuminate. Eye rounded, lateral, and centre falls trifle behind middle in head length. Adipose-eyelid narrow, best developed anteriorly. Mouth small, inferiorly terminal. Maxillary with thick integument, well inclined and reaches trifle over half way to eye or about opposite front edge of posterior nostril. Lips thick and fleshy. Upper lip broader, with two series of fleshy lamellæ, of which outer show much deeper clefts, are longer, though more vaguely defined externally. Lower lip peculiar, with deep-cleft narrow fleshy lobe each side leaving broad symphyseal surface, this crowned with seven or

more series of lamellæ, each deeply cleft and therefore distinct, besides each lamella being broken up transversely into as many small apical papillæ. Teeth of upper jaw quite different from those in lower, 6 in number, though each rather indistinctly tricuspid median cusp much better defined, and outer tooth of each side a little smaller than subequal inner ones. Lower teeth developed as two long slender upward-curved pointed teeth, and basally though well back on each side another similar, much shorter and inconspicuous tooth, apparently less firm in its socket. Mouth with very broad upper buccal membrane, its surface finely papillose. Tongue not determined. Mandible short, rami not especially high. Anterior nostril lateral, in conspicuous and somewhat bell-shaped cutaneous tube



Fig. 5.—*Leporinus desmotes* Fowler. (Type.)

equal to half of eye-diameter in length, and protruded beyond edge of upper lip. Posterior nostril lateral oblique slit, formed about last $\frac{2}{3}$ in snout length about opposite eye centre. Interorbital broadly convex. Suborbitals moderate in width. Hind edge of preopercle slopes forward. Opercle moderate, smooth.

Gill-opening restricted, extends forward only about last sixth in head. Gill-rakers $8 + 11$ rather short broad firm points, trifle over $\frac{1}{3}$ in gill-filaments and latter slightly exceeding half an eye-diameter. Isthmus rather broad and convex. Branchiostegals 4, rather broad, moderate, subequal.

Scales large, well exposed, slightly smaller on breast and predorsal region, though much more so on caudal base, otherwise uniform,

and disposed in longitudinal series parallel with l. l. Scaly sheaths at dorsal and anal bases low, allowing movements of fins, though not extending on their surfaces. Ventral with free pointed axillary scaly flap, nearly 3 in length of fin. L. l. complete, nearly straight, and tubes simple, extending well over first half in scale exposures.

Dorsal origin midway between snout tip and hind basal edge of adipose fin, first branched ray longest or extends back well beyond tips of last, and fin reaches but trifle less than half way to caudal base. Adipose fin inserted little nearer depressed dorsal tip than caudal base, and length about equals eye. Anal inserted trifle before adipose fin, first branched ray longest, and fin reaches trifle beyond caudal base. Caudal large, well forked, broad pointed lobes about equal. Pectoral low, pointed, reaches about $\frac{7}{8}$ to ventral. Latter inserted behind first branched dorsal ray base, fin large, and reaches $1\frac{2}{3}$ to anal origin. Vent nearly at first third in space between depressed ventral and anal origin.

Color in alcohol generally pale brownish or whitish, marked by ten very conspicuous well-defined slaty-black transverse bars, those on trunk meeting their opposite sides and sloping slightly posteriorly. On head lower surface pale and dark bars reflected slightly across. Lips pale or whitish. Iris slaty. First dark bar includes upper edge of snout, extends down along maxillaries and then across lower surface of mandible posterior to symphyseal papillæ, and its width much less than any of the other bars. Second dark bar close behind, and of moderate width, bridges lores over upper surface of snout. Third dark bar extends over interorbitals and also reflected on infraorbital. Fourth dark bar extends from occiput, includes opercles and pectoral root. Fifth dark bar slightly forked above and below, midway in predorsal. Sixth dark bar includes dorsal base anteriorly and ventrals. Seventh dark bar postdorsal and postventral in position. Eighth dark bar* wholly before adipose fin, extends to front half of anal. Ninth dark bar includes adipose fin and caudal peduncle. Tenth dark bar includes caudal base. Except for such intrusion as noted, all fins of whitish color generally.

Length 170 mm. (caudal tips damaged).

Type, No. 39,324, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Nos. 39,325 to 39,327, paratypes, same data. Head $3\frac{3}{7}$ to $3\frac{3}{4}$; depth $3\frac{3}{4}$ to 4; D. III, 10, 1; A. III, 8, 1; scales 33 to 35 in l. l. to caudal base and 3 or 4 more on latter; 6 scales above l. l.; 5 scales

below l. l.; 12 or 13 predorsal scales; snout $2\frac{2}{7}$ to $2\frac{1}{2}$ in head; eye $3\frac{3}{4}$ to $4\frac{1}{3}$; maxillary $4\frac{1}{5}$ to 5; interorbital $2\frac{2}{5}$ to $2\frac{1}{2}$; length 105 to 149 mm. Only comparatively slight individual variation is noticed in these examples. One example also has an additional lesser external mandibular tooth on the right side, only very inconspicuous.

($\Delta \varepsilon \sigma \mu \omega \tau \eta \varsigma$, prisoner, with reference to the dark cross-bands suggestive of convict garb.)

Schizodon fasciatus Agassiz.

One example 170 mm.

TETRAGONOPTERINÆ.

Tetragonopterus argenteus Cuvier.

One example 78 mm.

Tetragonopterus chalceus Agassiz.

Two examples, one 80 mm. and the other 97 mm.

Astyanax rupununi sp. nov. Fig. 6.

Head 4; depth $2\frac{4}{5}$; D. III, 8, 1; A. III, 28, 1; P. I, 12; V. I, 7; scales 35 in lateral line to caudal base and 3 more on latter; 8 scales above l. l.; 6 scales below l. l. to ventral origin; 7 scales below l. l. to anal origin; 13 predorsal scales; head width $1\frac{9}{10}$ in its length; head depth 1; first branched dorsal ray 1; first branched anal ray $1\frac{2}{7}$; least depth of caudal peduncle $2\frac{1}{3}$; pectoral $1\frac{1}{6}$; ventral $1\frac{1}{2}$; snout 4 in head measured from upper jaw tip; eye $2\frac{4}{5}$; maxillary $2\frac{2}{7}$; interorbital $2\frac{2}{3}$.

Body elongately ovoid, well compressed, deepest at dorsal origin, and edges all rounded convexly except median predorsal ridge, which slightly trenchant. Caudal peduncle compressed, length about equals least depth.

Head small, compressed, lower profile little more inclined than upper, and flattened sides not converging above or below. Snout convex, length about $\frac{3}{5}$ its width. Eye rounded, placed about first $\frac{2}{5}$ in head. Mouth very slightly inclined, transverse, broad, terminal. Maxillary inclined vertically, free, extends back to front eye edge and greatest expansion $3\frac{1}{4}$ in eye. Lips firm, rather thin. Upper jaw teeth biserial, outer series smaller and tricuspid, and inner series of larger mostly quincuspid, in all cases median cusp much largest. Mandibular teeth quincuspid, large, powerful and uniserial. At least one of teeth extending from inner upper series on inner base of maxillary, though tooth quite small and obsolete. Mandible very slightly protrudes, strong, and rami scarcely elevated inside mouth. Tongue depressed, rounded, and free in front, rather

broad. Inner buccal folds broad. Nostrils together, anterior simple pore with hind cutaneous rim exposing larger posterior aperture in crescent, and anterior falls about last third in snout length. Interorbital evenly convex. Infraorbital broad, covers cheek, with few radiating striae, and its width $\frac{3}{4}$ of eye-diameter. Hind preopercle edge nearly vertical. Opercle narrow, with a few obsolete striae, and its width trifle less than $\frac{1}{3}$ its length.

Gill-opening forward to front eye edge. Gill-rakers about 10 + 13, slender, tapering, pointed, and slightly shorter than gill-filaments, which latter about half of eye. Isthmus narrow, constricted, surface rounded though with median groove in front. Branchiostegals moderate, subequal.

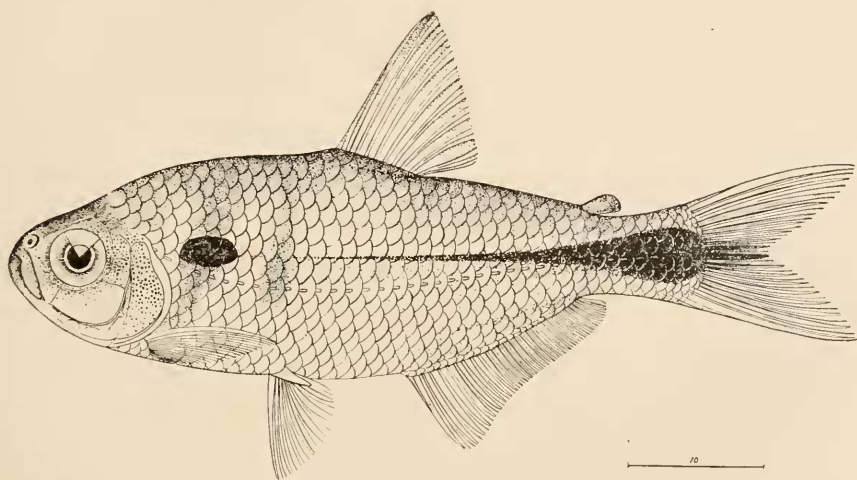


Fig. 6.—*Astyanax rupununi* Fowler. (Type.)

Scales disposed in even longitudinal series parallel with l. l., mostly uniform in size except those variably smaller along predorsal, breast, preventral, postventral, caudal base and along anal base. Ventral with free scaly pointed axillary flap about $\frac{2}{3}$ length of fin. L. l. complete, decurved slightly below median axis, and extending up a little low along side of caudal peduncle at first. Tubes simple, and better exposed in posterior course of l. l.

Dorsal origin midway between snout tip and caudal base, first branched ray longest, extends back well beyond tips of last, and depressed fin reaches half way to caudal base. Adipose fin inserted little nearer depressed dorsal tip than caudal base, and its length

about $\frac{2}{3}$ of eye. Anal with long base, inserted below last branched dorsal ray base, first branched ray longest equals half length of base, and lower edge nearly straight. Caudal well forked, pointed lobes about equal. Pectoral low, pointed, reaches slightly beyond ventral origin, though not back till opposite dorsal origin. Ventral inserted midway between pectoral and anal origins, reaches back $\frac{3}{4}$ to anal. Vent at tip of depressed ventral.

Color in alcohol largely dull brownish on back and upper surface of head. Sides of head and trunk paler than back, and becoming still more so, or whitish, on ventral region. All scales of back and sides with darker brownish edges, made up of dark dots. Sides of head, opercle, postorbital and muzzle sprinkled with larger dusky dots. Iris slaty. Slightly above level of eye centre, just above l. l., and about opposite middle in length of pectoral, a blackish ellipsoid blotch, its length about equal to eye. From its upper front end and its entire hind end a pale area extends transversely as two ill-defined pale or whitish spots, posterior much greater in extent. Extending back along vertebral axis a dusky line begins behind pale area and continues back along caudal peduncle side, where it widens, to expand still more at caudal base into large dusky or blackish blotch, and also reflected out on median caudal rays to their tips. Fins all whitish, dorsals and caudal tinged grayish. Distal edge of anal its whole extent slightly tinged grayish.

Length 64 mm.

Type, No. 39,228, A. N. S. P. Rupununi River, British Guiana. 1912. J. Ogilvie.

No. 39,329, paratype, same data. Head $3\frac{4}{5}$; depth $2\frac{3}{8}$; D. III, 9; A. IV, 26, 1; scales 36 in l. l. to caudal base and 3 ? more on latter; 7 scales above l. l.; 7 scales below l. l. to ventral origin; 8 scales below l. l. to anal origin; 14 predorsal scales; snout 4 in head; eye 3; maxillary $2\frac{1}{3}$; interorbital $2\frac{4}{5}$; length 62 mm.

This species appears to be related to *Ashtyanax wappi* (Valenciennes), as described from the type by Eigenmann.¹¹ It differs in the smaller head, deeper body, and larger eye. There are, however, no "traces of longitudinal streaks between the rows of scales."

(Named for the Rupununi River.)

Mœnkhausia chrysargyrea leucopomis subsp. nov. Fig. 7.

Head $3\frac{4}{5}$; depth $1\frac{9}{10}$; D. III, 9; A. IV, 26, 1; P. I, 13; V. I, 7; scales 34 in lateral line to caudal base and 2 ? more on latter (squama-

¹¹ *Mem. Carnegie Mus.*, V, 1912, p. 355, Pl. 52, fig. 1.

tion injured); 8 scales above l. l.; 7 scales below l. l. to ventral origin; 8 scales below l. l. to anal origin; 9 scales before dorsal to posterior end of occipital process; head width 2 in its length; head depth at occiput 1; snout $3\frac{5}{8}$; eye 3; maxillary $2\frac{2}{5}$; interorbital $2\frac{3}{5}$; first branched anal ray $1\frac{3}{5}$; least depth of caudal peduncle $2\frac{1}{4}$; pectoral $1\frac{1}{5}$; ventral $1\frac{1}{2}$.

Body deep, well compressed, rather ovoid, predorsal and postdorsal with slight median ridge, and other edges convex, except slight ridge each side along abdomen before ventral, most distinct

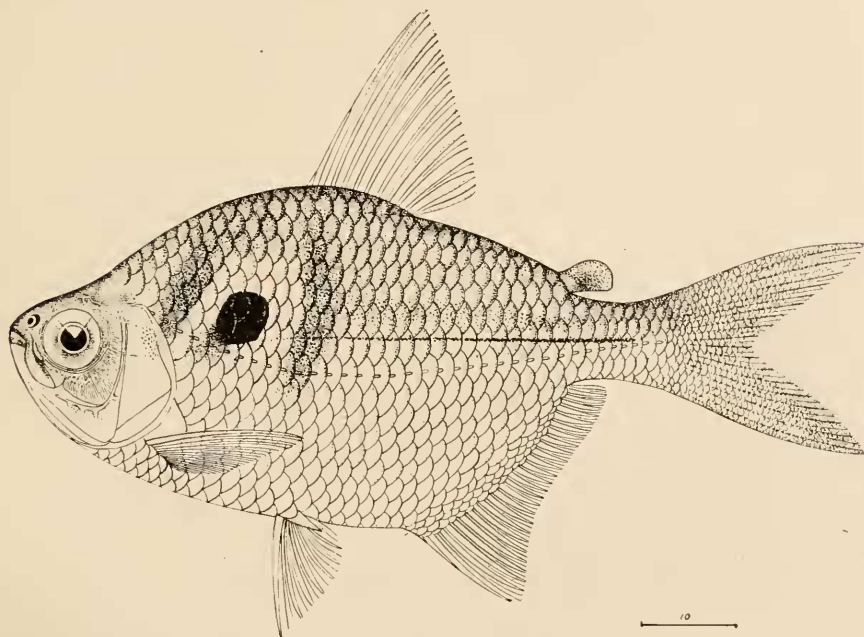


Fig. 7.—*Mankhausia chrysargyrea leucopomis* Fowler. (Type.)

just before latter. Greatest depth at dorsal origin. Caudal peduncle well compressed, and its length about $\frac{3}{4}$ its least depth.

Head deep, well compressed, lower profile more inclined than upper, which latter nearly straight from snout front to occiput. Flattened head sides very slightly converging below. Snout convex over surface and in profile, broadly convex as seen from above and length about half its width. Eye rounded, placed about first $\frac{2}{5}$ in head. Adipose-eyelids slightly developed in front and behind. Mouth broad, terminal, about level with upper rim of pupil. Lips thick, fleshy, firm. Jaws about even when closed, mandible scarcely

projecting. Maxillary vertically inclined, extends back slightly beyond front eye edge, and its greatest expansion a little less than 3 in eye. Teeth in upper jaw biserial, quincuspid, though those in inner series larger and apparently continued on inner base of each maxillary as a small single tooth. Mandible with uniserial quincuspid teeth, median largest and lateral ones very small posteriorly. Tongue broad, depressed, rounded and free in front. Inner buccal folds broad. Mandible strong, convex over surface, and rami not elevated inside mouth. Nostrils together, anterior simple pore with cutaneous flap behind exposing posterior in crescent, and frenum would fall about last fourth in snout length. Interorbital evenly convex. Posterior infraorbital broad, covers all of cheek except lower narrow strip, rather obscurely striate, and its greatest width $\frac{2}{3}$ of eye. Postorbital narrow. Hind preopercle edge nearly vertical, sloping slightly forward below. Opercle deep and narrow, and surface nearly smooth. A long occipital fontanel begins opposite front pupil rim and extends up within occipital process well towards its tip.

Gill-opening forward opposite front edge of eye. Gill-rakers about $9 + 12$, slender, lanceolate, about $\frac{2}{3}$ length of gill-filaments, and latter $1\frac{2}{3}$ in eye. Isthmus narrowly constricted, surface convex, and with slight groove in front. Branchiostegals moderate, subequal.

Scales mostly large and well exposed, disposed in longitudinal series parallel with l. l., and each one with a number of radiating striae, about 8 usually exposed. Scales become a little smaller along anal base, and two or three series extend over latter, at least on anterior part of fin. Scales of small size over most of caudal, at least its greater basal portion. Free axillary pointed ventral scaly flap, its length $\frac{2}{5}$ of fin. L. l. complete, slightly decurved, running a little low along side of caudal peduncle at first, and simple tubes extend about first $\frac{2}{3}$ over exposures of scales.

Dorsal inserted about midway between hind edge of adipose fin and snout tip, first branched ray longest, and depressed fin extends $1\frac{3}{4}$ to caudal base. Adipose fin inserted much nearer depressed dorsal tip than caudal base, its length about equal to eye. Caudal well forked, pointed lobes about equal. Anal inserted opposite last dorsal ray base, with slight elevated lobe in front. Pectoral slender, pointed, low, reaches slightly beyond ventral origin. Ventral inserted slightly before dorsal insertion, and depressed fin about reaching to anal origin. Vent at last third in space between ventral and anal origins.

Color in alcohol largely pale brownish, upper or dorsal region very slightly darker, and lower surface paler. Head brownish above, paler below. Lips pale brown. Eye slaty. Level with upper part of eye, or on vertebral axis, a blackish humeral blotch, a little deeper than wide, and distant from head 5 scales. All about humeral blotch a pale area, best understood on examining figure. Several scales posterior a narrow dusky streak begins and runs along vertebral axis, and though gradually enlarging to caudal base, not forming spot on latter. Fins all pale or whitish, dorsal and caudal tinged with grayish.

Length 95 mm.

Type, No. 39,330, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

No. 39,331, paratype, same data. Head $3\frac{5}{6}$; depth 2; D. III, 9; A. IV, 23, 1; scales 33 in l. l. to caudal base, and 2 more on latter 8 scales above l. l.; 6 scales below l. l. to ventral origin; 7 scales below l. l. to anal origin; 10 predorsal scales; snout 4 in head; eye $3\frac{1}{16}$; maxillary $2\frac{3}{5}$; interorbital $2\frac{3}{4}$; length 95 mm.

Apparently a form of *Mænkhausia chrysargyrea* (Günther),¹² though it is incompletely described. No mention is made of the pale area surrounding the humeral blotch, and the dark posterior lateral vertebral streak. That this color pattern should have resulted from preservation originally in formaline may be likely in the first case, though less so in the last.

(λευκὸς, white; ἑπ'ομῆς, shoulder.)

***Gymnocorymbus nemopterus* sp. nov.** Fig. 8.

Head $3\frac{4}{5}$; depth $1\frac{2}{3}$; D. IV, 9, 1; A. IV, 32, 1; P. I, 11; V. I, 7; scales 33 in l. l. to caudal base and 2 more on latter; 10 scales above l. l.; 10 scales below l. l. to anal origin; 12 predorsal scales; head width $1\frac{7}{8}$ its length; head depth at occiput 1; snout 4 in head, measured from upper jaw tip; eye $2\frac{2}{5}$; maxillary $2\frac{7}{8}$; interorbital $2\frac{1}{2}$; least depth of caudal peduncle 2; first branched anal ray $1\frac{1}{3}$; pectoral 1; ventral $1\frac{1}{2}$.

Body deeply ovoid, compressed, upper anterior profile double concave, and lower profile much more bulging. Body edges constricted, though not trenchant, and greatest depth at dorsal origin. Caudal peduncle well compressed, its length about half its least depth.

¹² *Tetragonopterus chrysargyreus* Günther, *Cat. Fish. Brit. Mus.*, VII, 1868, p. 328. Essequeibo.

Head small, compressed, upper profile slightly concave from snout to occiput, lower profile a little more inclined, and flattened sides but very slightly constricted below. Snout convex over surface and in profile, broadly convex as viewed from above, and its length about half its width. Eye rounded, placed about first $\frac{2}{5}$ in head. Adipose-eyelid little developed, only extends on eye a little in front and behind. Mouth broad, shallowly cleft, and latter falling on level with upper edge of pupil. Maxillary nearly vertical, reaches opposite front of eye, slender, and greatest expansion about $\frac{1}{3}$ of eye.

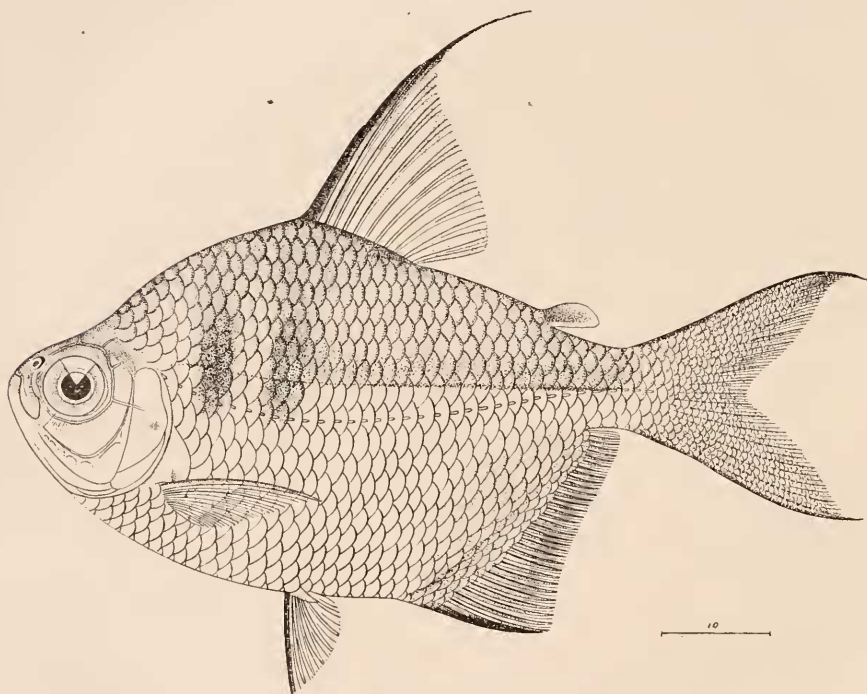


Fig. 8.—*Gymnocorymbus nemopterus* Fowler. (Type.)

Lips firm, moderate. Mandible, when closed, very slightly protruding, and moderate rami not elevated in mouth. Upper teeth biserial, quincuspid, and inner row larger. No maxillary teeth. Teeth in lower jaw uniserial, median largest, and similar to upper teeth. Tongue broad, depressed, free, and rounded in front. Nostrils together, anterior circular and its hind cutaneous rim exposes larger posterior in crescent with its frenum falling over front eye edge. Interorbital evenly convex. Posterior infraorbital broad,

leaves but very narrow naked strip below, scarcely striate, and its width $\frac{3}{5}$ of eye. Hind preopercle edge vertically inclined or sloping slightly forward. Opercle narrow, deep, smooth, upper hind edge scarcely emarginate.

Gill-opening extends forward opposite front pupil edge. Gill-rakers about $10 + 15$, lanceolate, slender, sharp-pointed, about $\frac{2}{3}$ in gill-filaments, and latter 2 in eye. Isthmus narrowly constricted, surface convex. Branchiostegals rather small, broad, subequal.

Scales well exposed, large, and disposed in series parallel with l. l. Caudal base and good portion of lobes, also anal base, covered with smaller scales. Each exposure of scale shows about 8 to 10 radiating striae. Ventral with short free pointed axillary scaly flap about $\frac{1}{3}$ in length of fin. L. l. complete, slightly decurved or bending down till about midway in greatest depth, and formed of simple tubes, each extending over about first $\frac{2}{3}$ of scale exposure. From occiput to origin of dorsal a narrow median naked strip, over which none of scales pass.

Dorsal origin a little nearer snout tip than caudal base, last simple ray longest and its tip prolonged into a filament extending back far as adipose fin. Latter inserted much nearer caudal base than last dorsal ray base, and fin length trifle less than eye. Caudal well forked, pointed lobes about equal. Anal inserted nearly opposite last branched dorsal ray base, first branched ray longest, though anterior rays not forming lobe. Pectoral broad, pointed, reaches back about opposite first third in depressed ventral. Ventral inserted about opposite dorsal origin and depressed fin extends $\frac{7}{8}$ to anal origin. Vent at last $\frac{2}{5}$ in space between ventral and anal origins.

Color in alcohol largely pale brownish, whitish on sides and below. Head dull brownish above, sides and below whitish. Iris slaty. A dull brownish vertical ill-defined humeral blotch, about third scale from head on vertebral axis and posterior 3 scales, also another less distinct one. Both these blotches with white intermediate area in front. From second dark blotch a narrow dusky vertebral line extends back towards caudal base, though ends abruptly before latter. Throughout its course it gradually expands and finally results in a spot on the side of caudal peduncle. Fins all pale and all more or less tinged with grayish. Front edges of dorsal, anal, and especially ventral, dusky. Adipose fin dusky. Median dark streak down back.

Length 80 mm.

Type, No. 39,332, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Also Nos. 39,333 to 39,336, paratypes, same data. Head $3\frac{1}{2}$ to 4; depth $1\frac{3}{4}$ to 2; D. III, 9, 1; A. IV, 31, 1 or IV, 32, 1; scales 34 in l. l. to caudal base and 2 more on latter; 9 scales above l. l.; 11 scales below l. l.; usually 13 predorsal scales, sometimes 14; snout $3\frac{3}{4}$ to 4 in head; eye $2\frac{2}{5}$ to $2\frac{3}{4}$; maxillary $2\frac{2}{3}$ to $2\frac{7}{8}$; interorbital $2\frac{1}{2}$ to $2\frac{4}{5}$; length 50 to 76 mm.

Related to *Gymnocorymbus thayeri* Eigenmann,¹³ and agrees as far as the short account allows. The long produced anterior or first branched dorsal ray and dark ventral and anal edges would appear to be distinguishing characters.

(Νῆμα, thread; πτερὸν, fin; with reference to the first branched dorsal ray.)

BRYCONINÆ.

Brycon falcatus Müller and Troschel.

Three examples, 118 to 137 mm.

Chalceus labrosus Schomburgk is imperfectly described, though likely identical. The figure is less satisfactory.

Chalceus macrolepidotus Cuvier.

Two examples, 150 to 157 mm. They differ slightly from *Pellegrinina heterolepis* Fowler.¹⁴ The latter has shorter pectorals, a broader snout, dusky fins, nearly even jaws, pectoral reaches beyond ventral origin, and adipose eyelid absent, etc. The erroneous locality was doubtless due to the mixing of collections in the Academy from West Africa and Surinam or some other part of South America. I shall therefore admit the nominal *Pellegrinina* as identical, following Regan.

STETHAPRIONINÆ.

Ephippicharax orbicularis (Valenciennes).

Head $3\frac{4}{5}$ to 4; depth 2 to $2\frac{2}{5}$; D. III, 9, 1; A. V, 31, 1 to V, 33, 1; scales 32 to 35 in l. l. to caudal base and 2 more on latter; 10 scales above l. l.; 10 or 11 scales below l. l. to anal origin; 9 predorsal scales forward to hind end of occipital process; snout $3\frac{3}{4}$ to 4 in head, measured from upper jaw tip; eye $2\frac{1}{8}$ to $2\frac{1}{2}$; maxillary $2\frac{2}{5}$ to $2\frac{3}{5}$; interorbital $2\frac{1}{3}$ to $2\frac{1}{2}$; length of three examples 50 to 66 mm.

CHALCINÆ.

Chalcinus angulatus (Agassiz).

Head $3\frac{4}{5}$; depth $2\frac{3}{4}$; D. III, 8, 1; A. III, 26, 1; scales 32 in l. l. to caudal base, and 3 more on latter; 6 scales above l. l.; 2 scales

¹³ Bull. Mus. Comp. Zool., 1908, p. 93. Amazons, from Tabatinga to Gurupa.

¹⁴ Proc. Acad. Nat. Sci. Phila., 1906, p. 442, fig. 39.

below l. l. to ventral origin, and 3 to anal origin; predorsal scales 14, counted forward to hind end of occipital process; snout 4 in head, measured from upper jaw tip; eye $3\frac{2}{3}$; maxillary 3; inter-orbital 3; gill-rakers 16 + 34; length 143 mm. This example differs slightly from others in the collection I previously studied in the slightly curved dorsal profile. Compared with the type of *Triportheus flavus* Cope, it shows few scales above l. l., and shorter pectoral, this not reaching tip of ventral, or scarcely beyond dorsal origin.

SERRASALMINÆ.

Serrasalmus gymnogenys Günther.

One example 130 mm.

Serrasalmus rhombeus (Linnaeus).

One example 148 mm.

Pygocentrus piraya (Cuvier).

One example 158 mm.

Pygocentrus scapularis (Günther).

One example 160 mm.

Pygopristis denticulatus (Cuvier).

Two examples, 85 and 112 mm. Each show about twelve darker vertical streaks on side of back, though last two which are on caudal peduncle anteriorly and on caudal base larger and darker. Upper sides also with a number of small dark brown spots, obscure and rather irregular. Both specimens infested with psorosperms, especially smaller.

MYLINÆ.

Catopryon mento (Cuvier).

Two examples, 90 to 135 mm.

Mylophus rubripinnis (Müller and Troschel).

Two examples, 105 to 175 mm.

CYNODONTINÆ.

Cynodon gibbus Spix.

One example 220 mm.

CHARACINÆ.

Exodon paradoxus Müller and Troschel.

Two examples, 98 and 118 mm.

XIPHOCHARAX gen. nov.

Type *Xiphocharax ogilviei* sp. nov.

Premaxillary with pair of small approximated or median canines, two smaller canines at distal end of each bone, and all smaller teeth

entirely uniserial. Mandible with three canines on each ramus, and these graduated to external, which largest. Maxillary with single series of fine small teeth and without canines. Clavicle notched. Lower angle of preopercle ends in spine directed down posteriorly. Cheeks naked.

Related to *Acanthocharax* Eigenmann, and *Heterocharax* Eigenmann, but differs in the above characters. One species.

(Ξιφος, sword; Χαραξ, Charax; with reference to the long canines.)

Xiphocharax ogilviei sp. nov. Fig. 9.

Head 4; depth $3\frac{1}{5}$; D. III, 8, 1; A. V, 38, 1; P. I, 16; V. I, 7; scales 78 in l. l. to caudal base and 6 more on latter; 26 scales in vertical series between dorsal origin and l. l.; 18 scales between anal origin and l. l.; 53 scales between dorsal origin and hind end of occipital

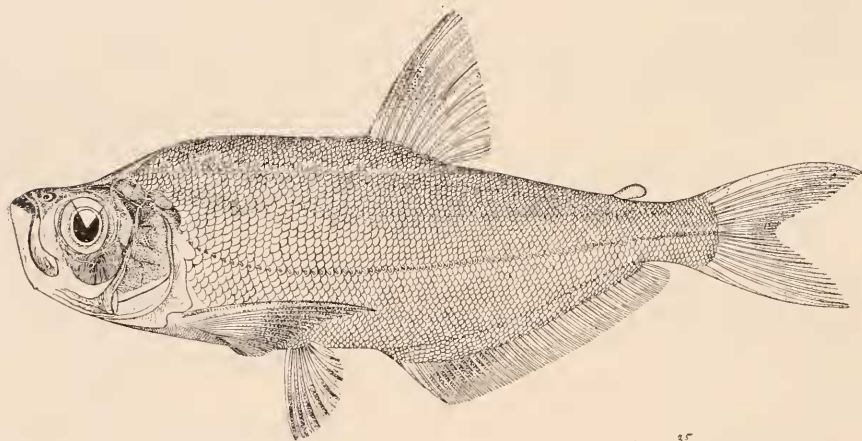


Fig. 9.—*Xiphocharax ogilviei* Fowler. (Type.)

process; head width $1\frac{9}{10}$ in its length; head depth at occiput $1\frac{1}{5}$; mandible $1\frac{4}{5}$; first branched dorsal ray $1\frac{1}{5}$; least depth of caudal peduncle 3; ventral $1\frac{5}{6}$; first branched anal ray $2\frac{1}{4}$; snout $3\frac{4}{5}$ in head, measured from upper jaw tip; eye $3\frac{1}{8}$; maxillary $1\frac{9}{10}$; inter-orbital $3\frac{3}{4}$.

Body elongate, greatly compressed, form elongately ovoid with greatest depth at ventral origin, edges all convexly rounded with breast broad and depressed and postventral well constricted. Caudal peduncle well compressed, its length about $\frac{3}{4}$ its least depth.

Head large, deep, well-compressed, though flattened sides not constricted above or below, upper profile concave and lower bulges

convexly into much greater inclination from mandibular articulation. Snout convex in profile and over surface, length about half its width, and broadly convex as viewed from above. Eye large, high, a trifle deeper than wide, and placed about first $\frac{2}{3}$ in head, measured from upper jaw tip. Pupil vertically ellipsoid, large. Adipose-eyelid slightly developed in front and behind. Mouth large, superior, broad. Maxillary vertical, extends down well below lower eye edge, only lower portion exposed, which shows many deep vertical striae, and greatest expansion $2\frac{3}{4}$ in eye. Lips firm, rather thin. Upper jaw with a general series of small equal simple conic teeth, extending on maxillaries nearly to their hind or lower end. Upper jaw teeth interrupted in premaxillary region by 4 equally spaced enlarged simple conic canines, of which inner pair slightly larger and obsoletely barbed. Mandible with 6 large conic barbed canines, and each outer one largest. Innermost pair of mandibular teeth smallest, though separated slightly more than those medianly in upper jaw, also smaller than latter. On sides of mandibular rami a few equal small obscure conic teeth, these also continued irregularly in places, as behind symphysis in an inner series. Inner buccal folds broad. Tongue broad, depressed, rounded and well free in front. Mandible large, well protruded in front, powerful, and rami moderately elevated in mouth. Nostrils together, anterior simple pore with cutaneous hind edge exposing larger posterior in crescent, frenum formed about level with upper eye edge. Interorbital broadly convex. Preorbital narrow and long. Infraorbital a little shorter than preorbital elements, covers greater part of cheek, surface with radiating striae, its width about half its length and latter about equals eye. Preopercle ridge and hind edge inclined well forward, and latter ends in broad strong pointed spine projecting obliquely down posteriorly. Opercle deep, upper hind edge scarcely emarginated, smooth, except deep transverse median groove. Bony exposure of shoulder-girdle with fine striae, and deeply notched to receive base of pectoral fin. Suprascapula entire, small. Occipital and parietal fontanels long and distinct. Occipital process extends back opposite hind edge of exposed shoulder-girdle.

Gill-opening extends forward opposite front eye edge. Gill-rakers III 3 + 10 II, strong, lanceolate, and $2\frac{3}{4}$ in gill-filaments, which latter about 2 in eye. Isthmus broadly convex, constricted in front. Branchiostegals large, subequal, broad.

Scales small, narrowly imbricated, disposed in longitudinal series parallel with l. l., and in transverse series sloping obliquely forward.

Scales on back all reduced in size and crowded. Caudal base and anal base covered with small scales. No scaly axillary flaps. L. 1. complete, extends as decurved a little below middle in greatest depth and sloping up low along side of caudal peduncle to caudal base medianly. Tubes of mostly simple structure, though ends in posteriorly downward directed prong.

Dorsal inserted a little nearer caudal base than snout tip, first branched ray longest, and depressed fin reaches $2\frac{1}{5}$ to caudal base. Adipose fin small, its length $1\frac{3}{4}$ in eye, and its origin nearer caudal base than depressed dorsal tip. Caudal (damaged) slightly emarginate and lobes apparently equal? Anal inserted slightly before middle of dorsal base, anterior rays slightly longer than others, and fin base not quite twice dorsal length. Pectoral broad, low, inserted slightly behind gill-opening, and reaches back apparently to anal (tip damaged). Ventral inserted a little nearer anal origin than pectoral origin, and fin about reaches latter. Vent about last fourth in space between ventral and anal origins.

Color in alcohol dull brownish on back, becoming paler below and on abdomen. Head brownish above, sides and below pale or whitish. Front of lips tinged brownish. Iris slaty. Fins all pale brownish, mostly with more or less dusky tints.

Length 210 mm. (caudal damaged).

Type, No. 39,337, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Only the above example known. In the figure, the ends of the fins are restored in some cases.

(Named for Mr. J. Ogilvie, who collected the type.)

ACESTRORHYNCHINÆ.

Acestrorhynchus falcirostris (Cuvier).

Two examples, 227 and 233 mm.

HYDROCYNINÆ.

Hydrocynus cuvieri (Agassiz).

One example 314 mm.

ERYTHRININÆ.

Hoplias malabaricus (Bloch).

Two examples, 150 and 155 mm.

Erythrinus unitæniatus Agassiz.

One example 160 mm.

GYMNOTIDÆ.

ELECTROPHORINÆ.

Electrophorus electricus (Linnaeus).

One example 346 mm.

STERNOPYGINÆ.

Sternopygus macrurus (Schneider).

Five examples, 128 to 432 mm.

Eigenmannia virescens (Valenciennes).

Two examples, 305 and 338 mm.

Gymnorhamphichthys hypostomus Ellis.

Two examples, 100 and 138 mm.

STERNARCHINÆ.

Sternarohus albifrons (Linnaeus).

Two examples, 141 and 173 mm. These agree largely with Cope's example, recorded as *Sternarchus albifrons* from the Peruvian Amazon.¹⁵ It differs, however, in having the light predorsal streak continuous from the head to the origin of the dorsal fin. The Rupununi examples show it only for the first quarter or third of this region. They also show the following: Head $5\frac{2}{3}$ to $6\frac{1}{4}$; depth $5\frac{1}{3}$ to $5\frac{1}{2}$; A. 150? to 160?; scales about 72 to 90 in l. l. according to tubes and pores; 15 to 18 scales above l. l., opposite pectoral tip, counted to median line of back; 3 or 4 scales above l. l. to dorsal origin; about 116 to 120 predorsal scales; about 30 scales below l. l. at greatest body depth; snout $2\frac{2}{3}$ to $2\frac{7}{8}$ in head; interorbital $4\frac{1}{2}$; maxillary $1\frac{2}{5}$ to $1\frac{3}{5}$ in snout; eye $3\frac{1}{2}$ to $5\frac{1}{2}$; gill-rakers 2 + 5 or 6. These two examples also differ from one another in respect to color, the larger having a black and rather long slender caudal peduncle. The smaller has a very constricted caudal peduncle, marked by a dusky blotch, and the caudal dusky, while in the larger example the caudal is white.

ASPREDINIDÆ.

Bunocephalus amaurus Eigenmann.

One example, 40 mm. long. It differs from Eigenmann's account in the head width, which is $3\frac{2}{3}$ in total length. Barbels banded basally. Maxillary barbel not quite reaching pectoral. Eigenmann gives¹⁶ as a distinction from *Bunocephalus gronovii* Bleeker, in his

¹⁵ *Proc. Amer. Philos. Soc.*, Phila., XVII, 1878, p. 628.

¹⁶ *Mem. Carnegie Mus.*, V, 1912, p. 126, Pl. 2 (non 1), fig. 2.

key, "distance from snout to dorsal considerably more than 3 in length with caudal." My example would show it about $2\frac{3}{4}$, nearly in agreement with his figure.

SILURIDÆ.

PIMELODINÆ.

Megalonema rhabdostigma sp. nov. Fig. 10.

Head $3\frac{1}{4}$; depth $4\frac{1}{4}$; D. I, 6; A. IV, 9, 1; P. I, 9; V. I, 5; head width $1\frac{3}{7}$ in its length; head depth at occiput $1\frac{7}{8}$; snout $2\frac{1}{10}$; eye $5\frac{3}{4}$; maxillary $2\frac{7}{8}$; mouth width $2\frac{1}{5}$; interorbital 4; antero-internasal $5\frac{1}{3}$; dorsal spine, and flexible tip, $1\frac{3}{4}$; length of adipose fin about $1\frac{2}{5}$; first branched anal ray 2; least depth of caudal peduncle $4\frac{1}{2}$; upper caudal lobe about $1\frac{1}{3}$; pectoral $1\frac{1}{2}$; ventral $1\frac{7}{8}$.

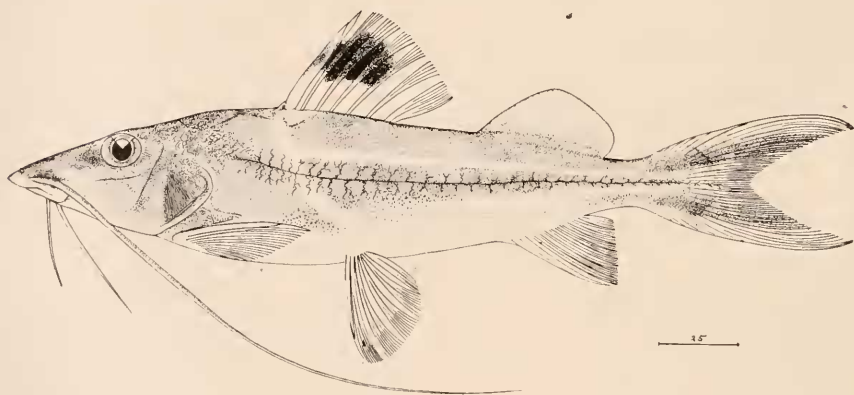


Fig. 10.—*Megalonema rhabdostigma* Fowler. (Type.)

Body moderately compressed, anteriorly slightly robust, deepest at dorsal origin, and edges all convex. Caudal peduncle moderately compressed, least depth about 2 in its length.

Head moderately robust, upper profile but very slightly undulate from snout tip to occiput and dorsal origin, and a little more inclined than lower profile, convex sides slightly converge convexly above and very broad below, with under surface but slightly convex. Snout broadly depressed, surface nearly level, its length about $1\frac{1}{4}$ its greatest width, or head width opposite front of eyes. Eye large, superior, ellipsoid, centre slightly behind middle in head length. Eyelids free, without adipose development. Mouth large, broadly transverse, commissure short and with folded groove at each corner reaching back opposite last $\frac{2}{5}$ in snout length. Broad band of

villiform teeth in upper jaw, twice as broad as similar mandibular band, and exposed below in specimen as now preserved, as snout protrudes well before mandible. No vomerine teeth. Inner buccal folds broad. Tongue broad, fleshy, not free except along edges, and depressed. Maxillary extends back nearly to last third in snout, with long barbel originating superiorly, depressed basally somewhat, and extending back nearly opposite last anal ray base. Outer mental barbels longer than inner, extend back slightly beyond pectoral origin. Inner mental barbels reach about $\frac{2}{3}$ of space to pectoral origin. Internasal spaces subequal, posterior pair slightly more remote from one another, and space between front and hind nostril about $1\frac{1}{3}$ in antero-internasal space. Interorbital broad, slightly concave, with fontanel extending back not quite opposite hind edges of eyes, where greatest width obtains, and gradually narrowed forward till it ends about opposite last $\frac{2}{3}$ in snout length. Occipital and lateral contiguous bones, also predorsal plate, all with fine rugose striæ. Opercle with well-marked radiating striæ.

Gill-opening extends forward about opposite last fifth in snout length. Gill-rakers $4 + 14$, short, firm, lanceolate, about $1\frac{2}{3}$ in filaments. Latter 2 in eye. Isthmus broad, level.

Body covered with smooth skin. Head rugosely striated, as mentioned, also occipital process and articulating predorsal buckler, besides exposure of shoulder-girdle over pectoral origin. L. 1. a little high at first, soon becomes median, with more or less alternating short branches most of its course, which continuous out on caudal base.

Dorsal origin about first $\frac{2}{3}$ in space between snout tip and caudal base, spine moderate, smooth, slightly curved, with flexible tip and latter slightly less than tip of first dorsal ray. Adipose fin inserted slightly nearer dorsal origin than caudal base, with contour sloping up to high median apex. Anal inserted slightly behind insertion of adipose fin, first branched ray longest and reaches back well beyond tip of last ray or $\frac{2}{3}$ of distance to caudal base. Caudal well forked, slender pointed lobes about equal, and emargination of fin nearly $\frac{2}{3}$ its length. Pectoral low, pointed, spine slender, both edges with small antrorse serræ, with flexible tip which longest of rays, and fin extends $1\frac{1}{4}$ to ventral. Latter inserted slightly nearer dorsal origin than origin of adipose fin, and depressed fin reaches $\frac{3}{4}$ to anal. Vent and genital pore well separated. Genital pore about first sixth in space between inner ventral ray base and anal origin, and vent about first third of same area.

Color in alcohol dull brownish above or on back and upper surface of head, lower or under surfaces and lips paler or whitish. From dorsal origin down on back a pale streak, when below l. l. it follows latter below to caudal. Behind oblique lateral pale streak, another lengthwise streak begins posterior to its crossing l. l. and continues to caudal base, keeping parallel with l. l. its whole extent. On caudal both pale streaks are merged in the median color of that fin. Lower boundary of lower pale streak indicated by a pale grayish lengthwise streak, made of minute dusky dots, which become closer on caudal base and finally form a blackish streak across median portion of lower caudal lobe nearly to its tip. In similar fashion upper dark body color marks upper caudal lobe. Maxillary barbels brownish above, pale or whitish below like mental barbels. Dorsal fin whitish, with a large sharply contrasted superior median blackish blotch. Adipose fin brownish. Remaining tints of caudal, on regions not mentioned, whitish. Pectoral, ventral and anal whitish.

Length 270 mm.

Type, No. 39,338, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Known only from the above. It resembles *Megalonema platycephalum* Eigenmann, but that species is said to be pale or nearly uniform in color, with a pair of hidden spots at the caudal base and the lower caudal lobe dusky.

(*Παῖδος*, streak; *στῖγμα*, spot; with reference to the lengthwise streaks and the dorsal blotch.)

***Chasmocranus longior* Eigenmann.**

One example, 87 mm. long.

***Rhamdia sebæ* (Valenciennes).**

One example, 127 mm. long.

***Rhamdia holomelas rupununi* subsp. nov. Fig. 11.**

Head $3\frac{4}{5}$; depth $6\frac{2}{3}$; D. I, 6; A, iv, 8; P. I, 8; V. i, 5; head width $1\frac{1}{3}$ in its length; head depth at occiput $1\frac{9}{10}$; snout $2\frac{3}{5}$; eye 4; maxillary 4; mouth width $2\frac{7}{8}$; interorbital 5; antero-internasal $5\frac{1}{4}$; dorsal spine 2; first branched dorsal ray $1\frac{2}{5}$; second branched anal ray $2\frac{1}{4}$; upper caudal lobe $1\frac{1}{8}$; least depth caudal peduncle 3; pectoral spine $1\frac{1}{2}$; pectoral fin $1\frac{1}{4}$; ventral fin $1\frac{3}{5}$.

Body elongate, slender, moderately compressed, anteriorly slightly depressed, deepest about dorsal origin, and edges all convexly rounded. Caudal peduncle compressed, length about equals its least depth.

Head depressed, profiles similar, well convex bulging sides slightly constricted above, and under surface broadly convex. Snout broadly depressed or very slightly convex, its length about $\frac{2}{3}$ its width opposite front eye edges. Eye ellipsoid, superior, impinging on upper profile, and centre midway in head. Eyelids free, not adipose-like. Mouth moderate, transverse, commissure very short. Broad bands of villiform teeth in jaws, lower $\frac{3}{4}$ width of upper and latter with posteriorly directed angle at each end. No other teeth in mouth. Inner buccal folds moderately broad. Tongue broad, depressed, fleshy, rounded in front and free around edges. Maxillary reaches about opposite middle in snout length. Maxillary barbel slender, depressed basally, reaches opposite second dorsal ray base. Outer mental barbels slightly extended beyond pectoral origin.

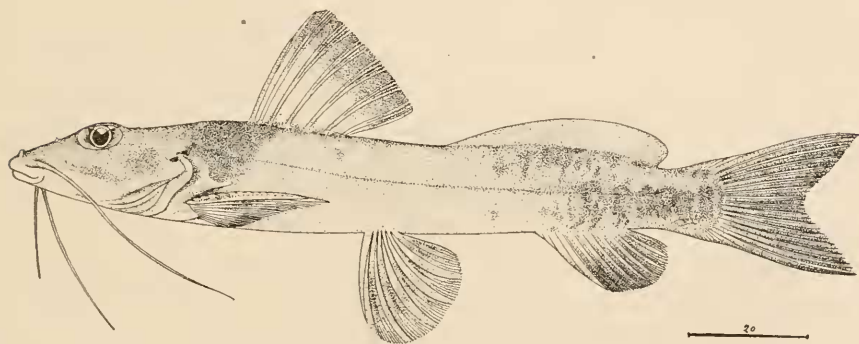


Fig. 11.—*Rhamdia holomelas rupununi* Fowler. (Type.)

Inner mental barbels shorter, reach $\frac{1}{7}$ to pectoral origin. Mandible shallow, with snout slightly protruded in front. Internasal spaces subequal, anterior nostril near front edge of snout and posterior at last third in its length. Interorbital narrow, osseous area restricted, and cutaneous supraorbital region elevated to produce concave appearance. Surface of head smooth, covered with skin. Opercle broad. Occipital process short, well separated from dorsal.

Gill-opening extends forward opposite front pupil edge. Gill-rakers $5 + 13$, slender, curved, lanceolate, little longer than filaments, or $1\frac{3}{4}$ in eye. Isthmus broadly convex.

Body covered with smooth skin, without any rugose areas. L. 1. superior at first, becomes median after ventrals, complete and continuous on caudal base, not branched.

Dorsal origin about first third in space midway between snout

tip and caudal base, spine with front edge distally furnished with a series of antrorse serræ under skin, and tip ends in flexible ray-like end. First branched dorsal ray longest, depressed tip falls slightly short of tips of last. Origin of adipose fin slightly nearer gill-opening than caudal base, slopes up gradually at first until near middle when uniformly high, and its entire length about $3\frac{1}{2}$ in combined length of head and trunk. Caudal moderate, well forked, lobes about equal, sharply and similarly pointed, and rudimentary rays well developed. Anal inserted slightly nearer ventral origin than caudal base, and third branched ray about longest, edge of fin rounded. Pectoral low, with strong spine, both edges with antrorse serræ though inner distal edge smooth, and depressed fin reaches $1\frac{1}{3}$ to ventral. Ventral inserted just behind dorsal base, fin rounded, and extends about $\frac{2}{3}$ to anal origin. Vent anterior, falls about first $\frac{2}{3}$ in space between ventral and anal origins.

Color in alcohol dull or pale uniform brownish above, becoming somewhat mottled or variegated with darker brownish on caudal peduncle, posterior region of trunk and caudal base. Lower surface of body pale brownish to whitish. Iris slaty. Lips pale. Maxillary barbels brownish, and mental barbels pale or whitish like chin. Fins all grayish-brown, tinted a little deeper medianly.

Length 145 mm.

Type, No. 39,339, A. N. S. P. Rupununi River, British Guiana J. Ogilvie.

Related to *Rhamdia holomelas* (Günther),¹⁷ and it may possibly prove to be identical. However, Günther gives the long adipose fin as 2 to $2\frac{1}{4}$ in total length without caudal, maxillary barbels reaching origin or middle of adipose fin, outer mental barbels reach middle of pectoral, depth 5 to $5\frac{2}{3}$, head 4, eye 2 in interorbital, caudal cleft to base and color uniform black with brownish shade, lighter on belly. His examples were a foot long, though he also had young. The inference would be that these characters would apply to young and adult as their latitude allows. For this reason, as my example will be seen to differ considerably, especially in the above-mentioned points, I allow it as distinct.

(Named for the Rupununi River.)

Rhamdella leptosoma sp. nov. Fig. 12.

Head $4\frac{1}{2}$; depth $8\frac{1}{4}$; D. I, 6; A. vi, 8; P. I, 9; V. i, 5; head width $1\frac{1}{3}$ in its length; head depth at occiput $1\frac{3}{4}$; snout $3\frac{1}{4}$; eye $3\frac{1}{4}$; max-

¹⁷ *Pimelodus holomelas* Günther, *Cat. Fish. Brit. Mus.*, V, 1861, p. 120. Essequibo.

illary 5; mouth width 3; interorbital 4; pungent dorsal spine 2; first branched dorsal ray $1\frac{1}{5}$; first branched anal ray $1\frac{7}{8}$; least depth of caudal peduncle behind adipose fin 3; pectoral spine $1\frac{1}{2}$; pectoral fin $1\frac{1}{4}$; ventral fin $1\frac{2}{5}$.

Body elongate, slender, compressed, deepest at dorsal origin and tapers back gradually and slightly, edges all convex. Caudal peduncle well compressed, least depth $1\frac{1}{2}$ its length, measured from hind edge of adipose fin.

Head small, depressed, profiles similarly and slightly convex, swollen sides below broadly converge above, lower surface convex. Snout broadly convex, length $\frac{2}{3}$ basal width at front of eyes. Eye ellipsoid, superior, centre slightly anterior in head length. Adipose-eyelid not developed, and eyelids free. Mouth moderately small,

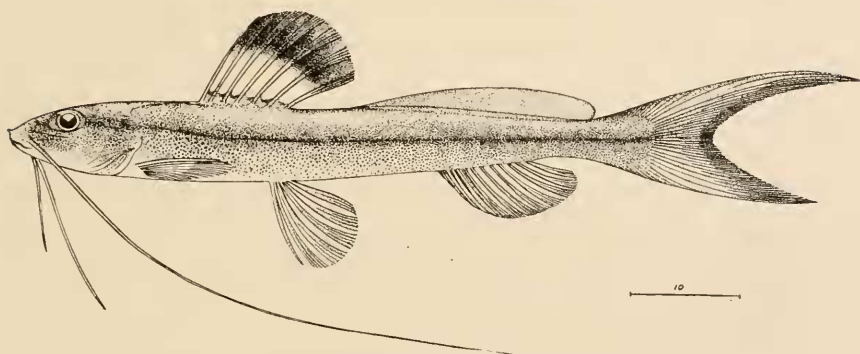


Fig. 12.—*Rhamdella leptosoma* Fowler. (Type.)

with upper jaw slightly protruding, commissure very short. Lips firm, fleshy. Maxillary extends about $\frac{3}{5}$ in snout length. Teeth in villiform bands in jaws, subequal in width, and each end of upper band ends in posteriorly directed angle. Inner buccal folds narrow. No other teeth in mouth. Tongue broad, fleshy, thick, depressed. edges not free. Maxillary barbel very long, slender, reaches back about half way in length of depressed last anal ray. Outer mental barbel reaches to last or distal sixth of depressed pectoral spine. Inner mental barbel reaches pectoral origin. Internasal spaces subequal, anterior nostril near front snout edge in slight tube and posterior nostril at last third in snout as simple pore. Interorbital moderate, level. Bones on upper surface of head covered with thin skin, surfaces smooth. A narrow lengthwise median fontanel, well defined most entire upper extent of cranium and ending pos-

teriorly at base of occipital process. Opercle widely and unevenly triangular. Occipital process extends back toward dorsal as narrow slender prolongation $\frac{2}{3}$ of space.

Gill-opening extends forward nearly opposite front eye margin. Gill-rakers 4+6, slender, lanceolate, firm, about $\frac{2}{3}$ of filaments. Latter $2\frac{1}{3}$ in eye. Isthmus broadly convex.

Body covered with smooth skin, and no rugose bony surfaces. L. 1. complete, midway along side, and extends to median caudal base.

Dorsal origin nearer adipose fin origin than snout tip, slender pungent spine smooth-edged and equals about half length of fin, ending in long slender flexible tip. Second dorsal ray longest and extends back as far as any of others. Adipose fin inserted nearly midway between front eye edge and caudal base, fin low, graduated up at first, and its length $2\frac{2}{3}$ in combined head and trunk length. Anal inserted nearly midway between ventral origin and hind basal edge of adipose fin, first to fourth branched rays subequally longest and fin rounded. Caudal very long, deeply forked, lobes slender, pointed, and upper longer. Pectoral low, spine pungent, outer distal edge and median posterior edge with small antrorse serræ, depressed fin extending $1\frac{1}{2}$ to ventral. Latter inserted about opposite fifth dorsal ray base, fin reaching $1\frac{2}{3}$ to anal. Vent close behind ventral bases, or about first fifth in space between ventral and anal origins.

Color in alcohol pale or very light brownish generally on upper surfaces, lower surface paler or translucent whitish. Upper surface of darker tint, due to minute dusky dots. A dark streak, made up of closely set dusky dots, extends from snout tip to caudal base, embracing l. 1. Lips pale brownish. Maxillary barbel brownish, and other barbels whitish. Dorsal largely pale or translucent basally on membranes, upper or distal halves dusky. Adipose fin and caudal dusky-gray. Other fins pale or grayish. Iris slaty.

Length 80 mm.

Type, No. 39,340, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Also, paratype, No. 39,341, A. N. S. P., same data. Head $4\frac{4}{5}$; depth 7; D. I, 6; A. VI, 8, 1; snout $2\frac{2}{3}$ in head; eye $3\frac{1}{4}$; maxillary $3\frac{2}{3}$; mouth width 3; interorbital 4; length 81 mm.

This species differs from *Rhamdella foina* (Müller and Troschel)¹⁸

¹⁸ *Pimelodus foina* Müller and Troschel, *Reis. Schomburgk*, III, 1848, p. 628. Takutu.

in its more slender body, more anal rays, longer maxillary barbels, and the coloration. *Rhamdella eriarcha* (Eigenmann and Eigenmann)¹⁹ another related species agrees in the slender body and coloration, though differs in its short maxillary barbels and fewer gill-rakers. *Rhamdella ignobilis* Steindachner²⁰ has maxillary barbels reaching only to the dorsal end basally, larger head and deeper body, though its color is suggestive.

(*λεπτὸς*, slender; *σῶμα*, body.)

Pimelodella cristata (Müller and Troschel).

One example 140 mm.

Pimelodella gracile (Valenciennes). Fig. 13.

One example 155 mm. Not previously recorded from British Guiana.

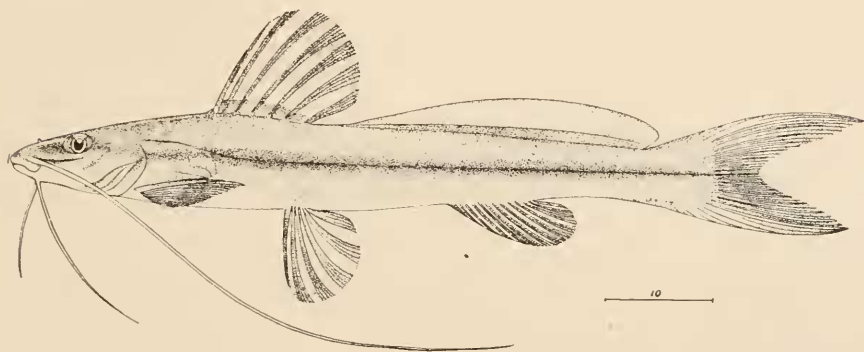


Fig. 13.—*Pimelodella gracile* (Valenciennes).

Pimelodus clarias (Bloch).

One example 220 mm. Maxillary barbels reach caudal base.

Hemisorubim platyrhynchos (Valenciennes).

One example 260 mm.

Sorubim lima (Schneider).

One example 270 mm. Also an addition to the fauna of British Guiana.

DORADINÆ.

Doras costatus (Linnaeus).

Two examples 180 mm. and 270 mm.

¹⁹ *Rhamdia eriarcha* Eigenmann and Eigenmann, *Proc. Cal. Acad. Sci.*, (2) I, 1888, p. 129. Rio Grande do Sul.

²⁰ *Sitz. Ak. Wiss. Wien*, CXVI, I, 1907, p. 484. Rio Cubatão, Brazil.

Doras hancocki Valenciennes.

One example 76 mm. long.

Leptodoras linnelli Eigenmann.

One example 165 mm.

Leptodoras trimaculatus sp. nov. Fig. 14.

Head $3\frac{2}{3}$; depth $4\frac{1}{4}$; D. I, 6; A. IV, 9; P. I, 7; V. I, 6; head width $1\frac{2}{3}$ in its length; head depth at occiput $1\frac{1}{3}$; snout $2\frac{2}{3}$; eye $2\frac{2}{3}$; inter-orbital $4\frac{1}{2}$; dorsal spine 1; ventral $1\frac{3}{4}$; first branched anal ray about $2\frac{1}{2}$; upper caudal lobe $1\frac{1}{4}$; least depth of caudal peduncle $4\frac{1}{3}$.

Body well compressed, moderately long, deepest at dorsal origin, edges all convex, though predorsal slopes up each side to median

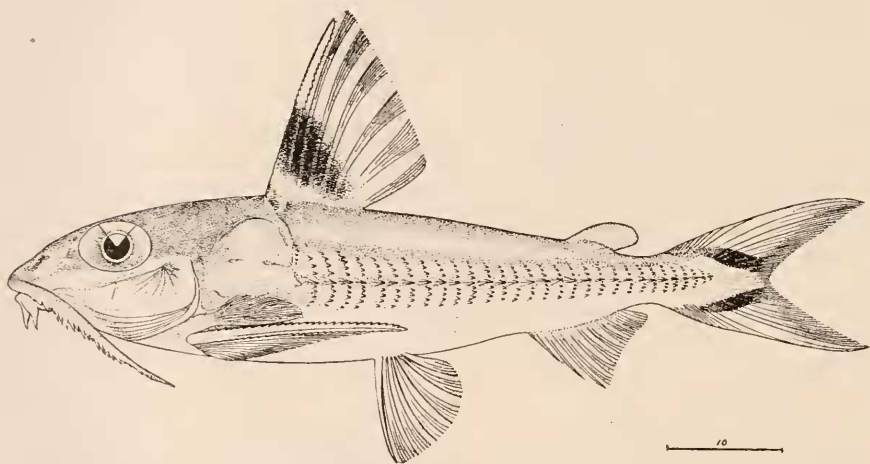


Fig. 14.—*Leptodoras trimaculatus* Fowler. (Type.)

constricted edge. Caudal peduncle wider than deep, least depth about half its length.

Head large, well compressed, elevated, upper profile convex, curves down rather steeply in front. Snout conic, basal width about $\frac{4}{5}$ its length, upper profile concave-convex. Eye large, ellipsoid, high, and centre slightly posterior in head length. Eyelid not free, continuous with skin of head as adipose-eyelid. Mouth small, anteriorly inferior. No teeth. Lips rather thick, fleshy. Maxillary barbel reaches slightly beyond pectoral origin, fleshy, and its outer edge fringed with cirri. Mandible with cluster of four thick papillose fleshy barbels hanging down, length of each about $\frac{2}{5}$ of eye. Tongue fleshy, little distinct. Nostrils simple pores, anterior

pair slightly closer to one another and about midway in snout length, posterior pair close in front of eye above. Interorbital nearly level. Opercle with a few radiating striæ covered with thin skin. Upper surface of head and predorsal buckler finely rugose-striate. Occipital fontanel begins on upper surface of interorbital opposite front eye edges and extends back half way to dorsal origin.

Gill-openings lateral, inferior, extend forward about opposite hind pupil edge. Gill-rakers 1+9, short, conic, blunt at tips, longest 4 in filaments and latter 2 in eye. Isthmus broad and flattened.

Body without scales and exposed skin smooth. L. l. with an armature of 30 large scutes, of equal width over most of extent, only becoming smaller on side of caudal peduncle, and hind edge of each strongly denticulated. Exposed bony shoulder-girdle, slightly swollen above pectoral base, with lengthwise striæ or grooves.

Dorsal origin a little nearer snout tip than origin of adipose fin, with long strong compressed spine, its front edge antrorsely serrate and hind edge also serrate, though there serræ turned forwards. Adipose fin inserted a little nearer caudal base than origin of ventral, fin small or about equals eye. Anal inserted before adipose fin, or slightly nearer ventral origin than caudal base, first branched ray longest and lower edge slightly emarginate. Caudal well forked, pointed lobes equal, and rudimentary rays well developed. Pectoral low, with large well-compressed spine, both edges strongly serrate, and when distended extends back nearly to first third in depressed ventral length. Ventral origin just behind dorsal base, and fin reaches $\frac{3}{4}$ to anal origin. Vent at first third in space between ventral and anal origins.

Color in alcohol largely slaty-gray above, becoming silvery or whitish below. Down middle of back from dorsal base, and just above each lateral series of scutes, a deep gray or nearly slaty lengthwise streak. Lateral scutes pale or whitish. Iris slaty. Sides of head silvery-white. Fins all with general tint pale grayish to whitish. Dorsal with subbasal blackish blotch anteriorly and extending down to bases of rays. Each caudal lobe with inner basal blotch of blackish.

Length 77 mm.

Type, No. 39,342, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Related to *Leptodoras linnelli* Eigenmann, but differs in the larger eye and coloration.

(Tri, three; macula, spot; with reference to the dorsal blotch and the two caudal blotches.)

AUCHENIPTERINÆ.

Trachycorystes galeatus (Linnaeus).

One example 145 mm. long.

Auchenipterus demeraræ Eigenmann.

Three examples 125 to 135 mm.

Ageneiosus ogilviei sp. nov. Fig. 15.

Head $3\frac{1}{4}$; depth $6\frac{1}{3}$; D. I, 6; A. ix, 32, 1; P. I, 14; V, i, 7; head width $1\frac{1}{2}$ in its length; head depth at occiput 2; snout 2; eye $6\frac{3}{4}$; maxillary 2; mouth width $1\frac{4}{5}$; interorbital $1\frac{1}{2}$; dorsal spine 2; first branched dorsal ray $1\frac{3}{4}$; length of adipose fin $3\frac{1}{6}$; first branched anal ray 3; least depth of caudal peduncle $5\frac{1}{8}$; upper caudal lobe $1\frac{3}{4}$; pectoral spine $1\frac{2}{3}$; pectoral fin $1\frac{3}{5}$; ventral $1\frac{9}{10}$.

Body elongate, trunk greatly compressed, and extremely broad

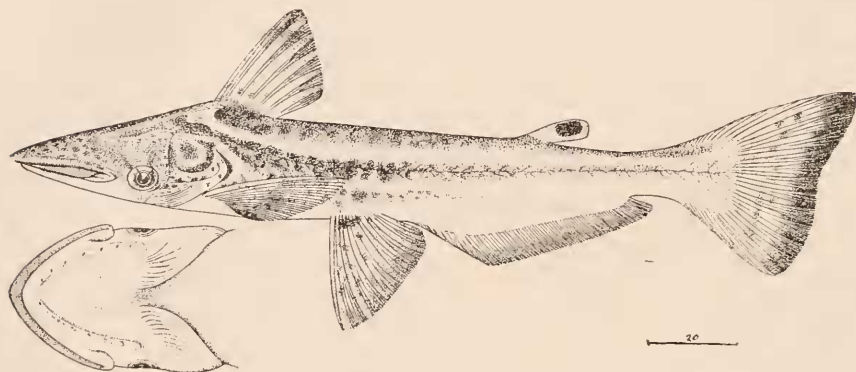


Fig. 15.—*Ageneiosus ogilviei* Fowler. (Type.)

anteriorly or at head, greatest depth at dorsal origin, edges all convexly rounded, and trunk slopes gradually back to rather deep caudal peduncle. Caudal peduncle well compressed, its least depth $2\frac{1}{4}$ in its length.

Head large, greatly depressed, upper profile nearly straight from snout tip to dorsal origin, lower profile horizontally convex, upper surface convex and lower surface flattened. Snout very broad, broadly convex as viewed above, length $\frac{3}{4}$ its width, and protrudes slightly beyond edge of mandible in front. Eye moderate, without free eyelid, laterally inferior, and about midway in head length. Skin around eye forming somewhat adipose-like. Maxillary reaches back till close in front of eye. Jaws with about equally wide or broad bands of villiform teeth, rather firm and rough to touch. No

other teeth in mouth. Inner buccal membranes very narrow, only slightly developed. Tongue large, broad, thick, depressed above, smooth, and free around edges. Lips not developed. Mandibular rami low and broad, and asperous edge of upper jaw includes it all around. Nostrils well separated, though posterior pair a little closer and placed about $\frac{4}{7}$ in snout length. Interorbital broadly convex. Opercle moderate, with few radiating striae, though these covered with thin skin of head. Frontal fontanel moderately broad, extends from about midway between eyes till about midway in snout length, and bones each side with lengthwise striae, though their surfaces covered with thin skin. Occipital process wide, strong, receives dorsal base in its posterior cleft.

Gill-opening extends forward about opposite middle of eye. Gill-rakers about $3+19$, lanceolate, sharp-pointed, firm, $1\frac{3}{4}$ in gill-filaments, and latter about $1\frac{1}{4}$ in eye. No pseudobranchiae. Isthmus broad. Branchiostegals 9, slender, outer longer.

Body covered with thin skin, at present rather soft and delicate. No ossifications exposed on head. L. I. complete, a little high at first, becoming midway along side of caudal peduncle, continuous on caudal base, and with moderately short branches all along its course, giving off both above and below.

Dorsal origin well anterior or well before first third in combined head and trunk length, with slender compressed smooth-edged spine but little less than first branched or longest dorsal ray, and depressed fin extends $2\frac{1}{4}$ to origin of adipose fin. Latter inserted little nearer ventral origin than caudal base, rather elongate and truncate behind. Anal long, inserted about midway between hind maxillary edge and caudal base, first branched ray longest and all other rays graduated down smaller, base of fin about $3\frac{1}{5}$ in combined head and trunk length. Caudal broad, rudimentary rays well developed, very slightly emarginate with upper lobe longer so as to produce oblique hind edge. Pectoral with compressed slender pungent smooth-edged spines ending in flexible tip, fin broad, low, reaches slightly beyond ventral, and its own insertion but slightly before dorsal. Ventral broad, low, insertion well behind dorsal base, and fin reaching back nearly to first branched anal ray base. Vent close in front of anal, its surrounding area greatly constricted.

Color in alcohol largely grayish or slaty-brown on back, sides and lower surface whitish. Head brownish above, obscurely mottled with dusky. Iris slaty. Lower surface of head, breast, and belly whitish. Opercle with dusky border below. Edge of gill-opening

and postorbital region whitish, marked with several pale dusky spots. Following course of l. l. its entire extent dusky lengthwise streak, well defined and separated from color of back by whitish or pale parallel and similar streak. Also another parallel and similar pale streak below until over anal medianly, after which it merges in general pale lower tint. From pectoral axilla dusky streak extends back to anal, fading out behind. Now all dusky lengthwise streaks, and dark color of back variegated with irregular blotches of dusky, anterior to ventral fins. Fins all with grayish-white general color. Dorsal with a few small dusky spots, and pectorals and ventrals with similar variable spots on their upper surfaces, showing through below, and with their distal portions more or less dusky. Anal shows traces of few pale dusky spots on distal portions of longest rays. Caudal with broad posterior dusky to blackish edge, each lobe with few rounded dusky spots. Adipose fin with large dusky blotch above.

Length 195 mm.

Type, No. 39,343, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Related to *Ageneiosus brevifilis* Valenciennes, though differs apparently in the large pectorals and ventrals and black-edged caudal. Cope's Peruvian example, about 200 mm. ? long, in poor condition, shows the damaged pectorals apparently not reaching the ventrals.

(Named for Mr. J. Ogilvie.)

PYGIDIDÆ.

STEGOPHILINÆ.

COBITIGLANIS subgen. nov.

Type *Ochmacanthus taxistigma* sp. nov.

Differs from *Ochmacanthus* Eigenmann in the anal being entirely behind dorsal base and spines of preopercle and opercle in lesser number.

(*Koereis*, loach; *glanis*, catfish; with reference to the superficial resemblance these fishes bear to the loaches of the Old World.)

Ochmacanthus taxistigma sp. nov. Fig. 16.

Head $5\frac{1}{2}$; depth $6\frac{1}{2}$; D. III, 6, 1; A. III, 4, 1; P. I, 5, 1; V. I, 4, 1; head width $1\frac{1}{10}$ its length; head depth at occiput $1\frac{1}{2}$; snout $3\frac{1}{4}$; eye 3; mouth width $1\frac{1}{2}$; interorbital $3\frac{1}{5}$; length of dorsal $1\frac{1}{5}$; of anal $1\frac{2}{7}$; of pectoral $1\frac{1}{5}$; of ventral 2; of lower caudal lobe $1\frac{1}{6}$; least depth caudal peduncle $2\frac{1}{2}$.

Body elongate, slender, well compressed, belly bulging so that

deepest about midway in space between pectoral and ventral bases, edges convex. Caudal peduncle well compressed, rather slender, least depth about $\frac{1}{3}$ its length.

Head well depressed, broad, upper profile a little more convex than lower, and lower sides bulge a little so that they slope slightly in above, lower surface nearly level. Snout broadly depressed, nearly evenly convex as seen from above, well protruded, and length about $\frac{2}{3}$ its greatest width about opposite front of eyes. Eyes without free eyelids, skin of head extending over, superior, elongate, and slightly ovoid, and placed about first $\frac{2}{7}$ in head length. Mouth broad and moderately crescentic as seen from below. Lips broad, fleshy, and with rather obsolete transverse plications, though on mandibular portion indistinctly broken or divided into papillæ. Maxillary ending in short, basally thick fleshy barbel, tip sharp or pointed, and measured along its upper free edge about equals eye

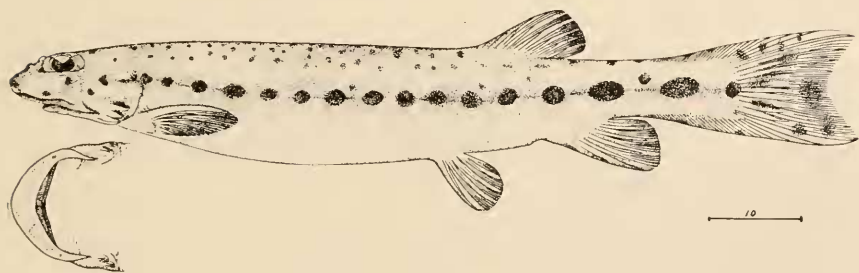


Fig. 16.—*Ochmacanthus taxistigma* Fowler. (Type.)

in length. Inside and hidden, also a much smaller maxillary barbel, its length about $\frac{1}{5}$ that of outer, though similar in most respects. Upper jaw with 6 series of uniformly small teeth, rows arranged transversely and continuously at equal distances across anterior portion of mouth, all more or less pliable except last series, which firmly, entrenched. At least 7 distinct transverse series of similar teeth arranged along each mandibular ramus, and a few others not in very regular order scattered about symphysis. No other teeth in mouth. Inner buccal folds broad. Tongue far back, broad, fleshy, depressed, and evidently scarcely free. Each end of lower lip forms broad fold on side of head below maxillary. Mandible broad, depressed, flattened on lower surface, and symphysis would form opposite front edge of eye. Nostrils well separated, anterior much more widely apart and close in front of eye, and both pairs with

slightly elevated cutaneous rims, though posterior pair larger and placed opposite and within space between front edges of eyes. Inter-orbital level. Preopercle with a cluster of 5 more or less concealed large conic spines, partly erectile. Opercle with 2 similar, only smaller, spines.

Gill-opening small, lateral, just before pectoral base.

Body naked, covered with smooth skin. L. l. complete, simple or without branches, and median along side.

Dorsal origin a little nearer caudal base than pectoral origin, first branched ray longest, and depressed fin extends about $\frac{2}{3}$ to caudal base. Anal inserted just behind dorsal base, first branched ray longest or extends back beyond tip of last so that fin reaches $\frac{1}{7}$ to caudal base. Caudal slightly emarginate, elongate and with well-developed fulcrum. Pectoral low, broad, extend about $\frac{1}{3}$ to ventral. Lateral inserted well before dorsal origin or about midway between pectoral origin and caudal base, and extends back $\frac{2}{3}$ to anal origin. Vent midway between depressed pectoral tip and anal origin.

Color in alcohol pale or very light brownish, shading to whitish on lower or under surface. Predorsal region with about four series of dusky irregular spots. From behind dorsal only a few median dusky spots, though upper surface of head with spots of similar size to those of predorsal region. One of these blotches marks opercular spines and another preopercular spines. Also a dark spot above pectoral base. Following course of l. l. 16 dusky blotches, at first small, then gradually larger until maximum size obtains on side of caudal peduncle. Along upper extent of this series also several smaller dark scattered spots. Fins all pale or whitish, several obscure spots of dusky on dorsal, caudal, and pectoral base, others uniform. Iris slaty.

Length 93 mm.

Type, No. 39,344, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

This species resembles *Ochmacanthus flabelliferus* Eigenmann, but differs in its dentition, coloration, and position of its fins.

(Τάξις, row; στίγμα, spot; with reference to the series of large dark lateral blotches along the lateral line.)

CALLICHTHYIDÆ.

Callichthys callichthys (Linnaeus).

One example 128 mm.

Hoplosternum thoracatum (Valenciennes).

One example 70 mm.

LORICARIIDÆ.

PLECOSTOMINÆ.

STONEIELLA gen. nov.

Type *Stoneiella leopardus* sp. nov.

Teeth fine, but little enlarged at ends, moderately small, not numerous. Interopercle with erectile spines, and these on movable plate. Body spinescent almost everywhere above, especially anteriorly. Lower surface of head, lower sides of abdomen and belly naked. Lateral edges, as well as upper surfaces of head, finely spinescent. Temporal plate imperforate. Tail short, compressed. Adipose fin present. Anal with five branched rays.

This genus differs from the related genera, or those of the present subfamily, in the naked or unarmed lower regions. In its dentition it approaches *Lithoxus* Eigenmann. One species.

(Named for Dr. Witmer Stone, in slight recognition of his contributions to natural history.)

Stoneiella leopardus sp. nov. Fig. 17.

Head 4; depth 5; D. I, 8; A. I, 5; P. I, 6; V. I, 5; spinescent armature of l. l. with about 24 bucklers, indistinctly defined; head width $1\frac{1}{10}$ in its length, with head measured from snout tip to hind end of occipital process; head depth at gill-opening about 2; snout $1\frac{1}{2}$; eye 5; width of buccal disk $2\frac{1}{8}$; interorbital $2\frac{7}{8}$; dorsal spine 1; anal spine $1\frac{3}{5}$; pectoral spine $1\frac{1}{5}$; ventral spine $1\frac{1}{5}$; least depth of caudal peduncle 3; upper caudal lobe about $1\frac{1}{5}$ (tip damaged).

Body moderately long, well depressed, convex above, flattened below, deepest at dorsal origin and widest at pectoral origins. Caudal peduncle stout, becomes more compressed behind, and length about $\frac{3}{4}$ its depth.

Head large, broad, convex above, flattened below, and upper profile a little inclined and nearly straight. Snout depressed, surface generally convex, as seen from above rather elongately triangular with length about $\frac{3}{4}$ greatest width at point opposite front of eyes. Eye superior, close on upper profile, a little ellipsoid, placed about last third in head length measured to hind occipital process, and edges without eyelid, free. Mouth inferiorly anterior, with broad rounded disk. Upper jaw retractile, with a series of 8 slender hooked compressed bifid teeth, each with tips of bifurcations worn in appearance as if somewhat truncate, and inner branch larger. Mandible with a series of 12 similar teeth. Teeth medianly in both jaws larger, and lateral ones smallest. Inner buccal folds broad. Lips

very broad, forming large buccal disk, and their lower surfaces with many papillæ, most distinct and raised where they border jaws. Outer edge of disk formed of conic fleshy barbel extending from hind end of maxillary, and its length about equals eye length. Nostrils large, together, both with elevated coextensive cutaneous rims, fall about last fourth in snout length, closer together than interorbital width, and placed in smooth area nearly as large in extent as eye. Interorbital moderate, level. Occipital process nearly an equilateral triangle, extends about half way to dorsal origin.



Fig. 17.—*Steniceia leopardus* Fowler. (Type.)

Gill-opening small, oblique, before pectoral base above, and its extent opposite and equal to eye in length. Isthmus very broad, level.

Body remarkable for its spinescent armature. Upper surface of head with small close-set sharp prickles or spines, including occipital process, opercle, and shoulder-girdle above pectoral base. Cluster of 12 depressible slender sharp-pointed spines on preopercle, last movable. Lower surface of head, breast, belly region around anal base, and along lower sides naked. Four lateral lengthwise series

of posteriorly directed spines, and short fifth series on lower side of caudal peduncle and caudal base. Each of these spines in lengthwise series well separated, with one or more smaller or minute spines scattered around basally. Thus indications of lateral plates, ill-defined at first, though well-marked on caudal peduncle and caudal base, corresponding to squamation, are formed. Anteriorly lower series of lengthwise spines originates on bony plate over base of pectoral spine. Predorsal and postdorsal regions of back with minute spines, also lower surface of caudal peduncle and lower surface of trunk above anal base. All spines of fins and sides of larger rays spinescent, latter condition varying from quite large strong denticles on front of pectoral spine to those very minute on fin-rays. L. 1. not evidently developed, median series of lateral spines in no way differing from others.

Dorsal origin about midway between that of adipose fin and snout tip, spine rather slender and with somewhat flexible tapering tip, fin quite large and all rays well developed. Adipose fin moderately large, spinescent, inserted little nearer last dorsal ray base than caudal base, fin about $\frac{1}{2}$ an eye-diameter in length. Anal inserted just after dorsal base, with slender and rather flexible spine, first branched ray longest and extends back about $\frac{3}{4}$ to caudal base. Caudal large, emarginate, both outer rays enlarged and spinescent. Pectoral low, with very strong spine, reaches $\frac{3}{5}$ to ventral origin. Latter inserted below first branched dorsal ray base, with strong spine rather flexible at tip, fin extends beyond anal base slightly, or about $\frac{3}{5}$ to caudal base. Vent with short tube, placed at last $\frac{2}{5}$ in space between ventral and anal origins.

Color in alcohol very dark or dusky generally, especially above. Everywhere more or less with large close-set blackish blotches, spots, or short vermiculations, on upper surface more or less obscured by bristles or spines, though below very conspicuous. General tint of lower surface much paler than back, thus adding to contrast. All fins with similar black blotches, the pale intervening areas often forming more or less into narrow transverse pale lines. Caudal with lobes distally somewhat chestnut-brown above and below, median portion of fin, however, with large blackish blotches like on trunk and narrow pale areas intervening. Iris slaty, also disk. Teeth worn brownish at tips, whitish basally.

Length 92 mm.

Type, No. 39,345, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Only the type known.

(*Λεόπαρδος*, leopard; with reference to the spots.)

Plecostomus plecostomus (Linnæus).

One example, 235 mm.

Pseudancistrus nigrescens Eigenmann.

Two examples, 112 and 175 mm. The smaller example agrees with Eigenmann's figure of the head, though the larger has the posterior edge of the occipital plate triangular. Both have numerous lateral bristles around front edge of head, except about snout tip, though in the larger example they are much longer, slender, and altogether better developed. Mandibular ramus $1\frac{1}{4}$ to $1\frac{3}{5}$ in interorbital. Dorsal spine equals or less than combined eye and snout length. Pectoral extends back about opposite first third in ventral. Color uniform dark brown above, belly pale. Trunk with brassy tinge in places.

Ancistrus hoplogenyus (Günther).

Two examples, 120 and 178 mm. Both show body, especially below, and fins with minute white spots.

LORICARIINÆ.

Loricariichthys acutus (Valenciennes).

One example, 210 mm. long (caudal tip damaged). This species has been described by Eigenmann as *Loricaria microdon*. My example does not appear to differ from *L. acutus* as described by Regan.

Loricariichthys griseus (Eigenmann).

One example 167 mm.

Harttia platystoma (Günther).

One example 145 mm.

Sturisoma monopenelte sp. nov. Fig. 18.

Head $5\frac{1}{8}$; depth $9\frac{1}{2}$; D. I, 7; A. I, 5; P. I, 6; V. I, 5; osseous plates 35 in lateral series; 24 postdorsal bony plates; head width $1\frac{4}{5}$ in its length, measured to hind edge of occipital process; head depth 3; snout $1\frac{2}{3}$; eye $6\frac{2}{3}$; mouth-width 4; interorbital $4\frac{1}{2}$; snout tip to front mouth edge $2\frac{1}{4}$; pectoral $1\frac{2}{5}$; ventral $1\frac{2}{3}$; anal $1\frac{1}{2}$; least width of caudal peduncle $6\frac{1}{2}$.

Body greatly elongate and depressed, slender in profile, dorsal and ventral surfaces generally convex. Very slight median predorsal depression, with slight ridge each side. From upper edge of eye obsolete keel extends back to join median lateral keel at fifteenth

plate of latter, junction indicated by slight angle. Median lateral keel at first obsolete, though after dorsal very distinct and continued as lateral flange to caudal. Lower lateral keel extends from plate of shoulder-girdle back to twenty-second plate of median (then upper) keel, where it merges without an interruption. Before each ventral origin slight lengthwise keel. Caudal peduncle extremely long, depressed, broad, and tapering.

Head rather small, sides convexly approximated above, lower surface broadly convex. Snout greatly acuminate, narrowed tip produced, width at front of eyes $1\frac{2}{3}$ its length. Eye small, a little ellipsoid, high, slightly posterior to last third in head measured to hind edge of occipital plate. Edges of eyes free, without membrane

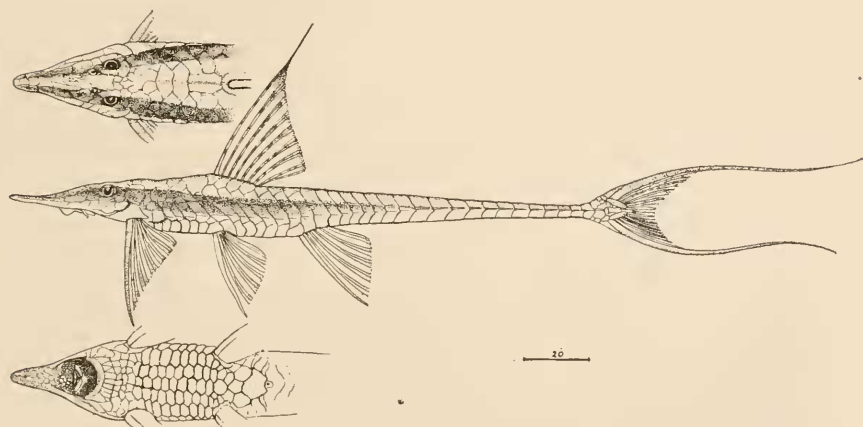


Fig. 18.—*Sturisoma monopelte* Fowler. (Type.)

covering over. Mouth width broad, forms rather large rounded disk, and transverse mouth cleft would form about last third in snout length. Lips very broad and greatly papillose, and papillæ bordering jaws much larger. About 66 small, simple, slender, clavated, and slightly crooked teeth in transverse series in upper jaw, and about same number of similar ones, more bent over at ends, in lower jaw. Ramus of mandible slightly less than eye. Upper jaw with 3 fleshy papilliferous flaps inside, median much larger. Inner buccal fold very broad and free. Externally each side of disk forms small pointed barbel. Nostrils in moderate-sized depression, together, formed just before front orbital edges, anterior with broad cutaneous flap mostly concealing posterior. Interorbital generally level, with lengthwise shallow depression each side of median line.

Gill-opening small, restricted, lateral, extends forward about opposite first $\frac{2}{3}$ in eye and extends behind latter nearly half an eye-diameter.

Scales, or scutes, all minutely spinescent. Predorsal region with 4 scutes to occipital. Five series of scutes transversely across belly, each outer series of larger ones. A single scute interposes each side medianly between anal plate and preanal plate.

Dorsal origin about first third in space between snout tip and caudal base, spine ends in filament extending back slightly less than half way to caudal base. Anal inserted well behind dorsal base or about midway between snout tip and thirty-second lateral scute, flexible spine, reaches $3\frac{2}{3}$ to caudal base. Caudal small, upper and lower, or outer, rays produced in filaments, latter at least $\frac{2}{3}$ rest of body length, and fin deeply forked. Pectoral with flexible spine extends slightly beyond ventral origin. Ventral inserted opposite dorsal origin, spine flexible, extends back slightly beyond anal origin. Vent midway in space between ventral and anal origins.

Color in alcohol brownish above, with dark lateral streak or ill-defined band extending along each side of snout from tip, including eye, embracing region of obsolete upper and distinct median lateral keels and then continued externally along edge of caudal peduncle where, however, narrow. Lower surface of snout dusky. Entire lower surface of head and body otherwise pale brownish to whitish. Fins all pale, dorsal obscurely mottled or blotched with pale dusky. Caudal with edges above and below, and filaments pale, median rays whitish, and posterior inner portions of both lobes more or less mottled dusky, that of lower nearly blackish and mostly uniform. Iris slaty.

Length 265 mm.

Type, No. 39,346, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

This species is closely related to *Sturisoma rostrata* (Spix) and, as compared with the specimen Cope recorded from the Peruvian Amazon as *Loricaria rostrata*,²¹ differs in the coloration. Cope's example also shows the fins less produced and two plates each side imposing between plate containing vent and preanal.

(Μόνος, one; πέλτη, shield; with reference to the single interposed shield between ventral and anal plate.)

²¹Proc. Amer. Philos. Soc., Phila., XVII, 1878, p. 681.

BELONIDÆ.

Potomarrhaphis guianensis (Schomburgk).

Two examples, 107 and 172 mm.

SCIÆNIDÆ.

Plagioscion squamosissimus Heckel.

One example, 295 mm.

Pachypops furcæus (Lacépède).

One example 148 mm.

CICHLIDÆ.

Acaropsis nasa (Heckel).

Two examples, 60 and 110 mm.

Æquidens tetranemus (Heckel).

One example 80 mm.

Cichlasoma severum (Heckel).

Two examples, 125 and 160 mm.

Mesonauta festivus (Heckel).

Two examples, 115 and 108 mm.

Geophagus surinamensis (Bloch).

Two examples, 170 and 112 mm.

Geophagus jurupari Heckel.

Two examples, 150 and 110 mm.

Apistogramma ortmanni rupununi subsp. nov. Fig. 19.

Head $2\frac{3}{4}$; depth $2\frac{3}{4}$; D. XV, 7; A. III, 6, 1; P. I, 11; V. I, 5; scales 22 in median lateral series to caudal base and 6 more on latter; scales 12 in upper branch of l. l.; 4 scales posteriorly in lower branch of l. l.; 3 scales between spinous dorsal origin and l. l.; about 8 scales transversely between origins of rayed dorsal and anal; 9 predorsal scales; head width 2 in its length; head depth at occiput about $1\frac{1}{5}$; snout 3; eye $3\frac{1}{2}$; maxillary $3\frac{1}{8}$; interorbital 4; mandible $2\frac{1}{3}$; last dorsal spine 2; third dorsal ray $1\frac{2}{5}$; third anal spine $2\frac{1}{5}$; third anal ray $1\frac{1}{5}$; least depth of caudal peduncle $2\frac{1}{10}$; caudal 1; pectoral $1\frac{1}{4}$; ventral spine $2\frac{1}{8}$; ventral fin $1\frac{1}{5}$.

Body rather elongately ovoid, well compressed, profiles similar, and deepest midway in length of depressed pectoral, edges all convex. Caudal peduncle well compressed, length about $\frac{2}{3}$ its least depth.

Head large, compressed, both profiles convex, upper more inclined, and nearly flattened sides slightly converging above, so that lower surface more broadly convex. Snout moderate, convex over surface

and in profile, basal width about $\frac{3}{4}$ its length. Eye large, rounded, superior, its centre falling slightly before middle in length of head, and eyelids or edge free. Pupil circular, rather large. Mouth rather wide, small, or with short slightly curved and nearly horizontal commissure. Muzzle moderate, not especially protruded, and jaws equal. Premaxillary protractile. Maxillary rather small, extends well back towards eye beyond posterior nostril, though not quite to eye, well inclined and curved down below lower lip. Lips rather fleshy, form rather broad, free fold along each jaw edge. Jaws with villiform and nearly uniform teeth, arranged in band in each. Appar-

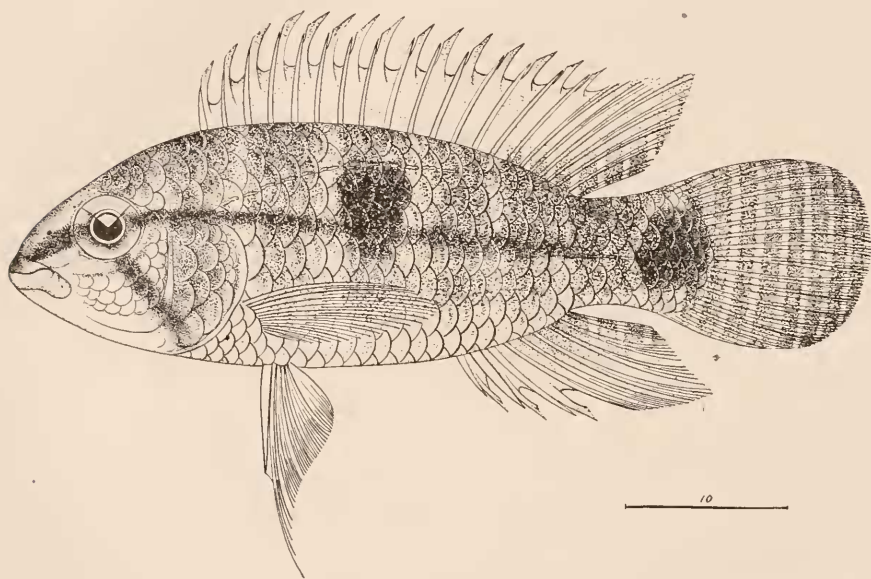


Fig. 19.—*Apistogramma ortmanni rupununi* Fowler. (Type.)

ently no other teeth. Buccal folds inside mouth moderately wide. Tongue depressed, slightly pointed, and free around front edge. Mandible rather shallow, rami a little elevated inside mouth posteriorly, and surface convex. Nostrils small, anterior larger, about last third in snout length, and posterior inconspicuous, superior, and slightly before eye front, also slightly nearer together than outer pair. Interorbital convex. Hind preopercle edge nearly straight, slightly inclined backward. Membrane along hind edge of gill-opening moderate.

Gill-opening extends forward about last $\frac{2}{5}$ or nearly opposite hind

eye edge. Rakers 1+4, short broad fleshy, or rather flexible, tubercles, about 4 in gill-filaments. Latter 2 in eye. Suprapharyngeal pad at epibranchial of first gill-arch well developed. No pseudobranchiæ. Isthmus convex, mostly concealed by broad branchiostegal membrane. Branchiostegals slender, outer much longer.

Scales large, well exposed, finely ctenoid, arranged in lengthwise series, and slightly smaller on breast than elsewhere on trunk. Fins scaleless, except caudal base, and latter covered with many small scales. Head largely scaly. Cheek with 3 rows of scales. Occipital scales extend forward to middle of interorbital. Opercles and subopercles scaly. Head otherwise naked. No axillary scaly flaps. Pores on preopercle, lower cheek, suborbitals, muzzle, and interorbital small and in moderate number. L. l. interrupted, or of two divisions, upper longer, at first 3 scales from spinous dorsal origin but soon separated from spinous dorsal base by one scale, and in posterior portion of its extent by only half a scale. Lower or posterior division of l. l. median along caudal peduncle, with tubes only over 4 scales, being preceded by 3 punctures on as many scales, and no tubes or punctures, continued posteriorly, or on caudal base. Tubes all simple, well exposed, or extend whole extent of each scale exposure.

Spinous dorsal inserted nearer snout tip in vertical than spinous anal origin, graduated up from first or shortest to fourth, after which more or less subequally long to posterior ones, which longest. Edge of spinous dorsal deeply notched, and edge of each membrane forms produced longer free point. Rayed dorsal with posterior median rays longest, form a produced point, begins about opposite of origin of lower l. l., and edge entire. Spinous anal begins about opposite end of upper branch of l. l., spines graduated to third or longest, edge of fin with cutaneous points similar to those of spinous dorsal. Rayed anal similar to rayed dorsal, its origin also about opposite. Caudal with hind margin nearly truncate or very slightly convex, fin elongate in contour. Pectoral broad, median upper rays longest and depressed fin extends back about opposite vent. Ventral inserted close after pectoral base, spine extends $\frac{1}{3}$ to anal origin, while tip of first ray reaches rayed anal origin. Vent close before anal.

Color in alcohol largely deep brownish on back, becoming paler only on lower or under surface of head and abdomen. General tint at present with more or less swarthy appearance. Along side of snout, from its tip, then continued behind eye in straight horizontal line, a black streak or line, and not continued behind to caudal

peduncle, but terminating above first two tubes of lower branch of l. l. Slightly posterior from lower eye edge a dusky streak extends obliquely across cheek to subopercle. Suborbital chain also marked by broad-angled dusky streak, its point of divergence at beginning of oblique dark streak extending across cheek. Several irregular broken streaks or blotches of brownish on forehead. About eight broad obscure transverse bands, at present ill-defined and somewhat irregular as to boundaries. From pectoral base they appear still more obsolete as a lengthwise dusky shade, hardly a streak or band, extending horizontally back toward caudal base. Third obsolete transverse band, between upper l. l. and median lateral streak, set out as large blackish blotch. Caudal base with large blackish blotch, about equal to eye in size. Iris slaty. Fins all with dull dusky-gray ground-color, and only ventral slightly paler. Rayed dorsal with eight or nine vertical pale dusky streaks, of same general tint of spinous portion of fin, and extending mostly on basal and posterior portion of fin. Rayed anal with similar streaks, about six in number. Caudal with nine similar streaks, though first two interrupted by basal spot, and all streaks parallel and slightly inclined forward. Other fins unmarked.

Length 54 mm.

Type, No. 39,347, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Another example, No. 39,348, A. N. S. P., paratype, same data. Head $2\frac{3}{4}$; depth $2\frac{3}{4}$; D. XIV, 6; A. III, 6, 1; scales 21 in median lateral series to caudal base, and 6 more on latter; 14 scales in upper branch of l. l.; 5 scales in lower branch of l. l.; 9 predorsal scales; snout $3\frac{1}{10}$ in head; eye $3\frac{1}{5}$; maxillary 3; interorbital $3\frac{3}{4}$; length 50 mm.

This species is closely related to *Apistogramma ortmanni* (Eigenmann), though differs in coloration, the black superiorly median lateral blotch not being present in that species according to the figure and description.²²

(Named for the Rupununi River.)

Cichla ocellaris Schneider.

Two examples, 183 and 105 mm.

Crenicichla lugubris Heckel.

One example 285 mm.

Crenicichla alta Eigenmann.

One example 163 mm.

²² *Mem. Carnegie Mus.*, V, 1912, p. 506, Pl. 68, fig. 1.

Crenicichla pterogramma sp. nov. Fig. 20.

Head $2\frac{3}{4}$; depth $4\frac{2}{5}$; D. XVIII, III, 11, I; A. III, 10, I; P. I, 15; V. I, 5; scales about 60 in median lateral series to caudal base, and about 6 distinct on latter; 23 scales in upper branch of l. l.; 11 scales in lower branch of l. l. before caudal base, and 2 more on latter; 8 scales between origin of spinous dorsal and l. l.; 4 scales between origin of rayed dorsal and upper l. l.; 12 scales in vertical series between origin of spinous anal and upper l. l.; 19 predorsal scales; head width $2\frac{1}{4}$ in its length; head depth at occiput 2; mandible 2; last dorsal spine 3; seventh branched dorsal ray $1\frac{2}{5}$; third anal spine 4; seventh branched anal ray $1\frac{1}{5}$; least depth of caudal peduncle 3; caudal 1; pectoral $1\frac{4}{5}$; ventral 2; ventral spine $3\frac{2}{5}$; snout $3\frac{1}{5}$ in head, measured from upper jaw tip; eye 5; maxillary $2\frac{3}{5}$; inter-orbital 4.

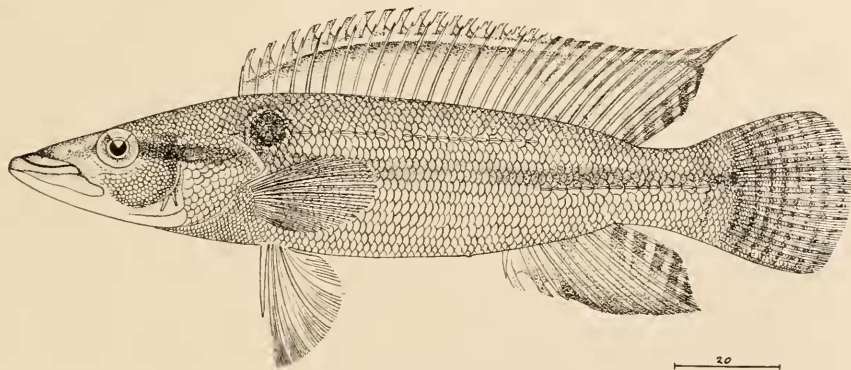


Fig. 20.—*Crenicichla pterogramma* Fowler. (Type.)

Body elongate, compressed, rather slender, deepest about midway in depressed ventral length, and edges all convex. Caudal peduncle well compressed, length about $\frac{4}{5}$ its least depth.

Head large, compressed, conic, upper profile straight from snout tip nearly to spinous dorsal origin, lower profile similar, convex sides not constricted above or below. Snout broad, rather depressed, surface convex, length about $\frac{7}{8}$ its basal width. Eye large, rounded, close to upper profile, its centre near first $\frac{2}{5}$ in head length as measured from snout tip. Eyelids free, not adipose-like. Pupil large, circular. Mouth large, wide, with horizontal commissure. Premaxillary protractile. Maxillary rather large, reaches back little inclined till slightly past front of eye, though not quite opposite front edge of pupil, received below preorbital. Lips fleshy, rather broadly folded

above and narrow below. Jaws with broad bands of small or fine uniform conic teeth, largely depressible and directed inwards. No other teeth. Buccal folds inside mouth moderately broad. Tongue depressed, attenuate, and free in front. Mandible broad, shallow, well produced in front beyond snout tip, rami not elevated inside mouth, though outer lip forms broad fleshy pocket to receive upper at rictus. Nostrils simple, lateral or on side of snout about last third its length. Interorbital level. Preopercle with entire edge, slightly inclined forward above. Opercle ends in rather pointed cutaneous flap above.

Gill-opening extends forward about opposite last $\frac{2}{3}$ in eye. Rakers, 1+12 asperous short broad tubercles, about 3 in gill-filaments. Latter about $1\frac{3}{4}$ in eye. Isthmus narrow, constricted, surface convex. Branchiostegals slender, outer longer, and membrane rather broad across isthmus.

Scales large, well exposed, smooth on head, predorsal region, and region embracing bases of dorsal fin, though this greatly narrowing posteriorly, also on breast and belly, other regions with finely ctenoid scales. Fins scaleless, except caudal base, and on latter scales smooth and quite small. Cheek with 9 series of scales. Occipital scales extend forward only to hind edge of interorbital. Opercles and subopercles scaly. Head otherwise naked, though with a number of mucous pores, especially above. L. l. interrupted, or in two divisions, upper much longer, scales larger than those surrounding. Upper division of l. l. concurrent with dorsal profile, replaced below by median lower division. Tubes simple, and all well developed or extending completely across exposure of scale.

Spinous dorsal inserted about midway between snout tip and seventeenth dorsal spine base, first spine shortest and all others graduated up to twelfth and then subequal, though last spine longest. Edge of spinous dorsal with membranes ending in cutaneous points, free and projecting above tips of spines. Rayed dorsal higher than spinous portion, rays graduated to fourth and fifth branched, which longest and produced in filamentous point, edge of fin entire. Spinous anal inserted slightly before second simple dorsal ray base, spines graduated up to third which longest, and edge of fin with cutaneous points like spinous dorsal. Rayed anal with seventh branched anal ray longest, preceding rays subequally shorter, and edge of fin entire. Caudal rounded, elongate. Pectoral broadly expanded, median rays longest, and fin depressed extends slightly less than half way to anal origin. Ventral inserted close behind anal

base, spine pungent or about $\frac{3}{5}$ length of fin, and latter depressed half-way to anal. Vent falls about last $\frac{2}{5}$ in space between depressed ventral tip and anal origin.

Color in alcohol largely dull brownish, paler below. A dark or dusky lateral streak extends from hind eye edge back to median caudal base, though in position parallel and just above posterior or lower branch of l. l. At its termination on caudal base a black pale-edged ocellus not much larger than pupil, and another on fourth to sixth scales of l. l. about equal to eye in size. Vertical fins grayish, dorsal paler basally, and subterminally lengthwise pale or whitish streak its entire length and extending back to point of rayed fin. Last dorsal rays with about four transverse whitish streaks. Anals with lower edge dusky, and upper posterior half of fin with about six whitish transverse streaks. Caudal grayish, lower edge darker, and with about six transverse whitish streaks. Ventral and anal whitish. Iris slaty. Lower surface of head pale.

Length 162 mm.

Type, No. 39,349, A. N. S. P. Rupununi River, British Guiana. J. Ogilvie.

Only the type known. Apparently related to *Crenicichla saxatilis* (Linnaeus) and *C. alta* Eigenmann, though differs at once in coloration.

(*Μεσρον*, fin; *γαμμή*, line; with reference to the pale submarginal streak on the dorsal fins.)

TETRODONTIDÆ.

Colomesus psittacus (Schneider).

Three small examples.

SOLEIDÆ.

Achirus lineatus (Linnaeus).

Two examples.

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